The Mining Journal

Established 1835 — Railway & Commercial Gazette

Vol. CCXLI No. 6171 — LONDON, NOVEMBER 27, 1953 — PRICE 8d

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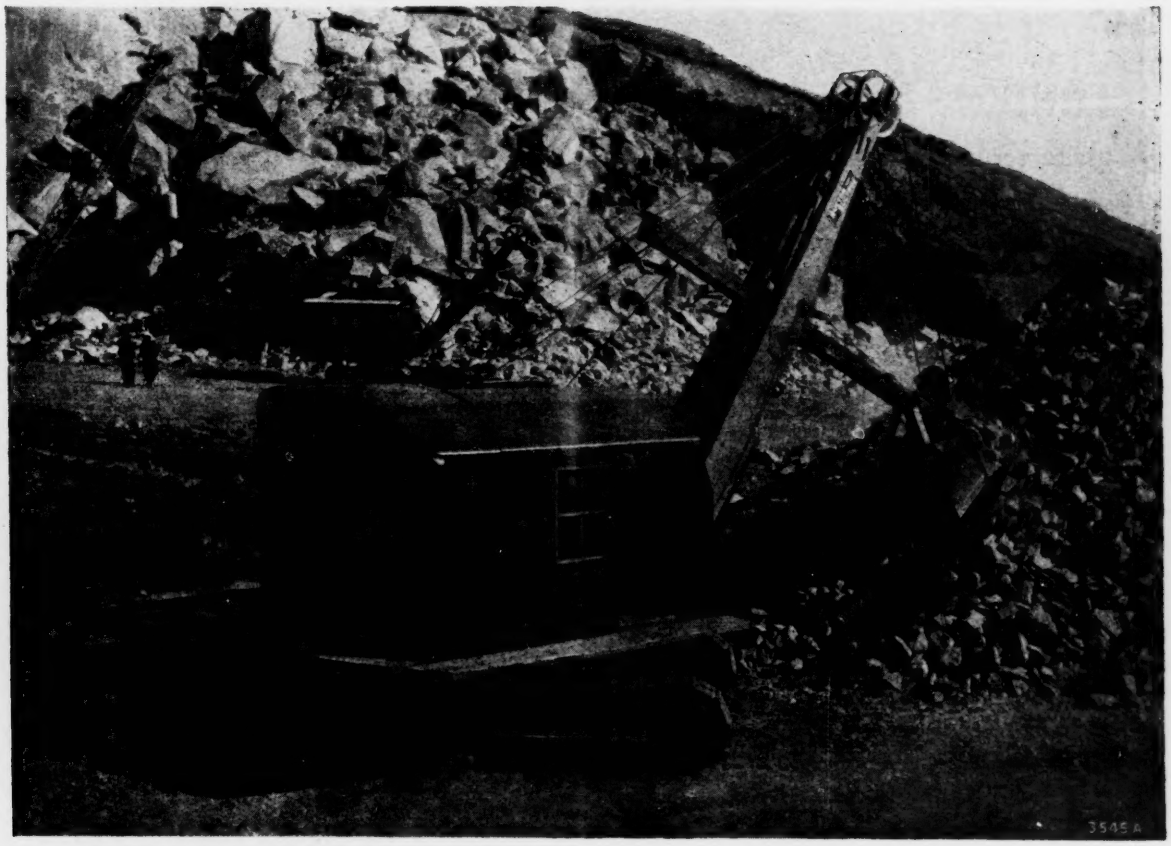

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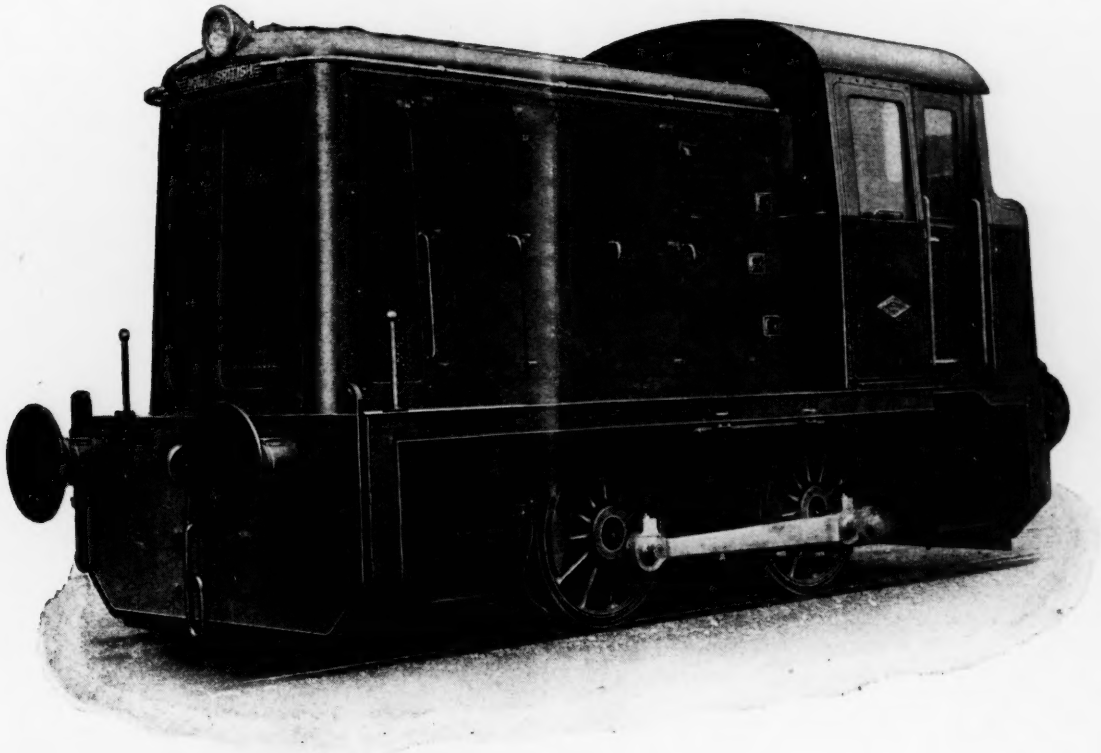

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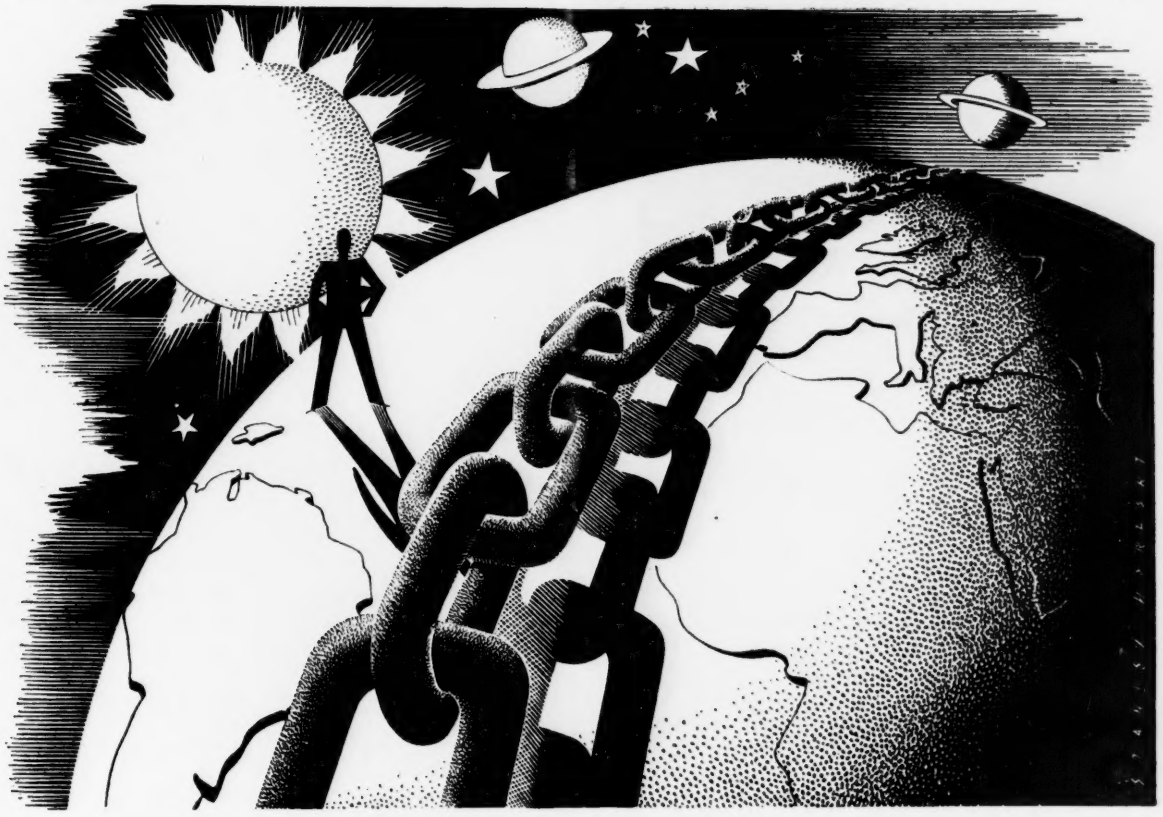

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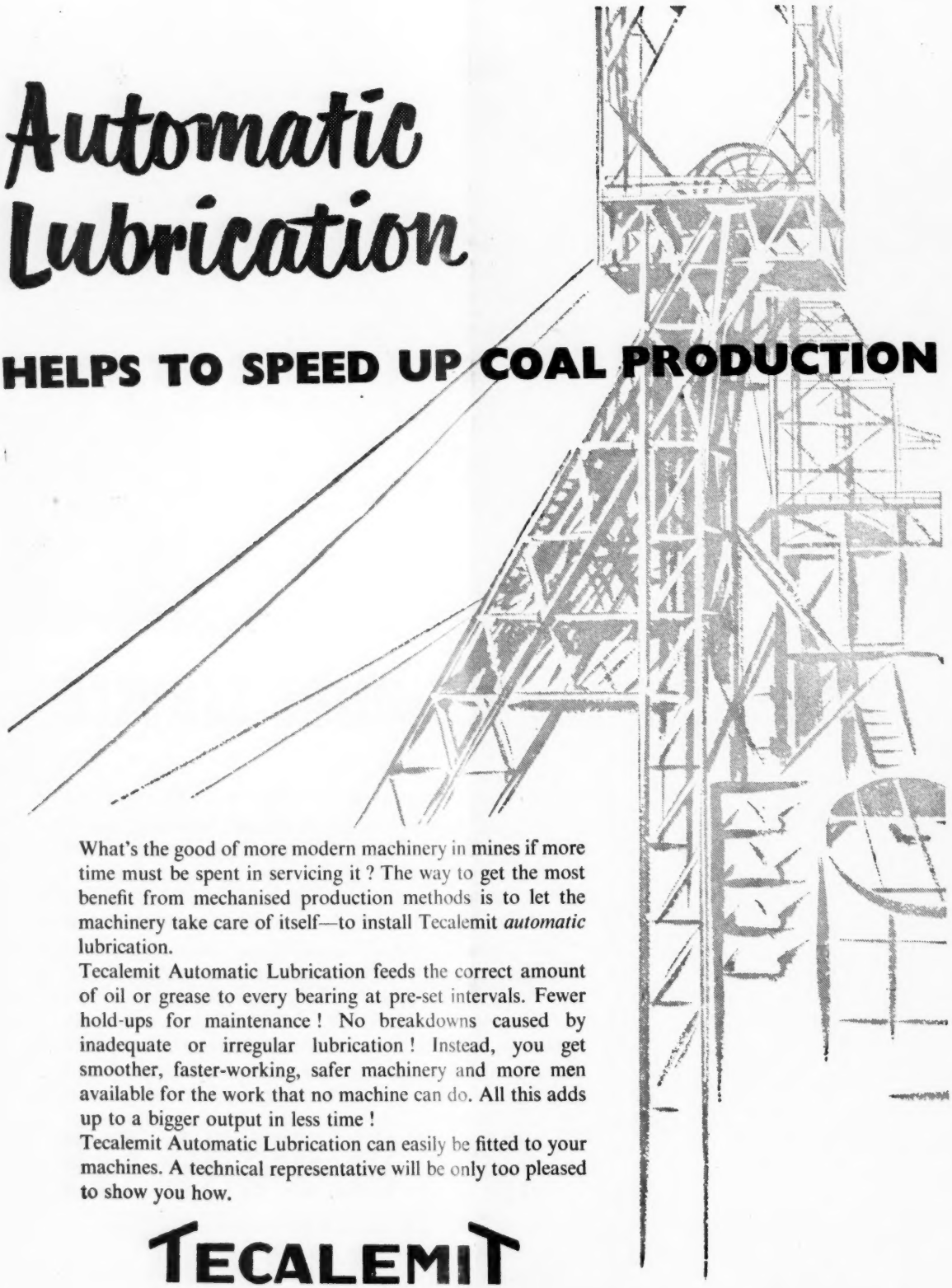

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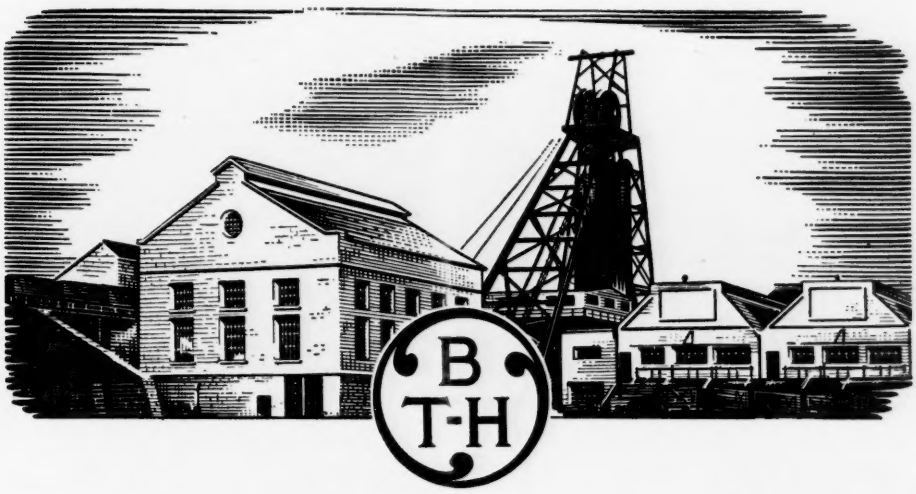

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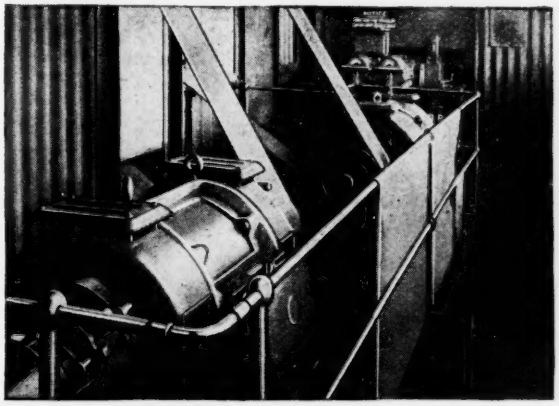

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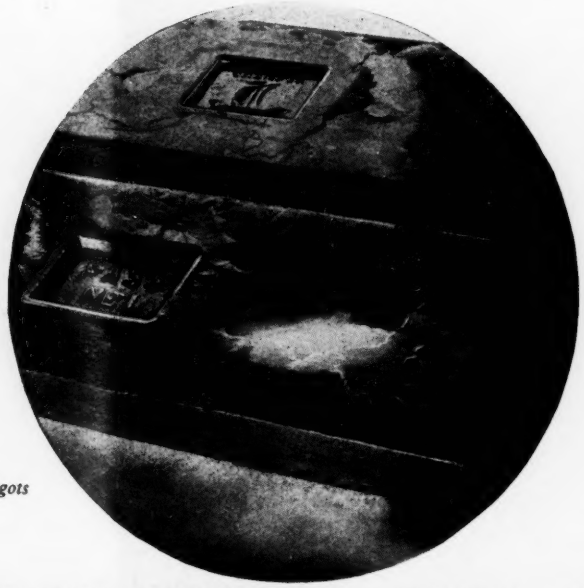

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The Mining Journal

Established 1835

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NOTES AND COMMENTS

The New Mines and Quarries Bill

The new Mines and Quarries Bill, which received its first reading in the House this week is inevitably a major event in the history of British mining legislation. This Bill is the first major legislative measure concerned with safety and health in mines to come before the House since the Coal Mines Act of 1911 while the legislation dealing with quarries in 1894 and with metalliferous mines in 1872 (then regarded as an interim measure) has remained to a large extent unchanged since then.

The present Bill, which covers all branches of mining and quarrying has been incubating for a considerable time. As far back as 1910 Mr. Winston Churchill, then Home Secretary, set up a Royal Commission on Metalliferous Mines and Quarries which issued its report shortly before the outbreak of World War I. In 1935 Captain Harry Crookshank, then Secretary of Mines, appointed another Royal Commission which reviewed the current situation in the light of the considerable progress which had been made both in mining and safety practice. This Commission reported in 1938 but the passing of the consequential legislation was on this occasion frustrated by the outbreak of World War II. With the nationalization of the coal mining industry after the war and the consequent organizational upheavals which this necessitated, there was clearly much to be said for allowing the industry to become stabilized on its new basis before seeking to introduce new safety legislation which, to be effective, needed to be based on experience in the question of the new organization, and indeed in the event it is clear that experience such as that of Knockshinnock has played an important part in the final shaping of the new Bill.

Now that it has arrived, the new Bill naturally represents the consolidation of the experience of over 40 years including the recommendations of two Royal Commissions. During this period the technique of mining and the equipment used in the mines has undergone considerable evolution and has brought with it new safety problems unknown a generation or so ago.

The first point to appreciate regarding the new Bill is that it typifies what is now becoming a familiar legislative technique, namely to define basic principles only in the Bill, leaving their practical application to be dealt with by Regulation. This difference in approach will at once be apparent to readers who recall the extent to which detailed provisions were written into the Coal Mines Act of 1911, and should go far to allay anxieties expressed in some quarters prior to publication of the Bill that its enforcement would prove excessively burdensome on certain sections of the industry.

What will be of immediate concern to every branch of the industry will be the regulations promulgated from time to time, not all of which will necessarily have universal application. In this connection, it is the intention of the Bill that there shall be full consultation with all interested parties when regulations are at the drafting stage. Whatever may be the objection to the growth of delegated legislation in other directions, it does appear well suited to the requirements of the present case in that safety and health in mines is essentially a technical matter, and consequently as mining practice evolves there will be a constant need for revision of regulations to keep pace with changing practice. Clearly much greater flexibility is possible in this direction if the underlying principles only are established in the Bill.

Of outstanding importance in the new Bill are the sections redefining the duties and responsibilities not only of mine managers but also of mine owners. Without attempting to go into these provisions in detail it may be said that they aim to place upon the mine manager undivided responsibility for the management of his mine and to provide safeguards, of which he may avail himself, if called upon to carry out orders, the wisdom of which he has reason to doubt. In addition, specific responsibility is placed upon the mine owner to ensure that the mine or quarry is conducted in accordance with the provisions of the Act.

This portion of the Bill has a special significance for the N.C.B., where the size of the organization and the remoteness of headquarters control from the pit has to no small extent been responsible for the weakening of personal responsibility among mine managers, a subject which we discussed here at some length in our issue of October 30 last. The statement by the Minister of Fuel and Power in the House last month regarding the N.C.B.'s own attitude towards its organizational problems made it clear enough that the Board was seeking the means whereby maximum responsibility could be placed upon the colliery manager for the day-to-day management of his pit. To

this extent it is clear enough that the Board's thinking is entirely in line with the intention of the present Bill. Human relationships in management cannot, however, be ordered solely by legislation, and although the ultimate compulsion of the law is desirable, and will in some cases, no doubt, prove necessary, it is far too cumbersome a tool for top management to employ in ensuring the maintenance of proper relationship between the mine manager and the various specialist departments which impinge upon his work. The ultimate threat of Court proceedings make no real contribution to the problem either of creating adequate managerial incentives in a nationalized undertaking nor of inculcating a better understanding of the correct organizational relationship between the managers in the direct chain of command and the various specialist departments. Nor, indeed, is this a primary purpose of the Bill.

At the same time with the particular genius which British government seems to have for achieving the right end by indirect means, it does not appear improbable that the effect of these provisions in the Bill may be so to strengthen the hand of the mine manager vis-à-vis the specialist departments as to greatly assist the Coal Board in the tackling of its organizational problem.

On the technical side every section of the old health and safety legislation has been overhauled and in due course we may expect to see a consolidated set of regulations replacing the existing miscellaneous patchwork, which should in itself greatly assist the mine manager. Notable in the new Bill is the change of approach to the danger from falls of ground in roadways and workings, which still account for some 40 per cent of deaths and injuries underground. Unlike the 1911 Act, which laid down the principle of systematic and adequate roof support, the new Act in the light of modern research and experience reflects a larger and more comprehensive approach to the problem involving control of the whole strata rather than those portions immediately over the mine workings. This new concept of "strata control" is thus strategic rather than tactical in approach and might, for example, take the form of deliberately causing a strata break over waste to reduce the pressure at some more important point.

In the matter of dust suppression, the new Bill places as much emphasis on dust injurious to health as on explosive dust. This is no more than an example of the way in which safety legislation follows the development of good mine practice rather than the reverse, as in fact the agency of coal dust as distinct from silica dust in lung diseases, which was not fully appreciated at the time of the 1911 Act, has long been recognized and combatted.

The Bill also provides for raising the minimum age for employment of boys underground from 15 to 16, and establishes statutory maximum hours of underground working (inclusive of all overtime) for boys between 16 and 18, together with statutory weekends and a prohibition on nightwork.

All in all, this Bill, the need for which has long been apparent, should prove to be largely a non-contentious piece of legislation receiving support from all parties. The high standards of integrity which H.M. Mines Inspectorate has always maintained, has undoubtedly been the greatest single factor in the reputation for safe mineworking which this country has long enjoyed, and there can be little doubt that in operating the new Act this service will continue to enjoy the trust and high esteem of all those engaged in the industry.

Reflections on an Old Theme

The Annual Dinner of the Royal School of Mines Association was held last Tuesday under the chairmanship of the President, Major H. R. Kerr, M.C. The setting for this convivial and enjoyable occasion was provided, as in recent years, by the Tallow Chandlers Hall, and could scarcely be bettered. It is appropriate that one of the more ancient City Livery Companies should provide a meeting place for those associated with one of our oldest industries and one moreover which has long held close associations with the City of London.

It has for some years been the commendable practice of the Association to include among its guests the headmasters of some of our leading public schools. For us this always provides a welcome opportunity for reassessing the impact which the overseas mining industry is making on the minds of the present-day schoolboy, and the appeal which it has for him as a career.

As in past years, we were on this occasion left most forcibly with the impression that whatever shortage there may be in the supply of recruits to the industry, this arises primarily from lack of awareness of the opportunities afforded by the industry rather than an instinctive initial resistance to the idea of mining as a career. We continue to be convinced that alike in the public and grammar schools there is always to be found a proportion of boys, admittedly relatively small, with good secondary education, who have no preconceived ideas as to their future career and no advance commitment through family connection or tradition. Although the proportion of such boys at each school is no doubt small, the aggregate of school-leavers in this category each year throughout our public and grammar schools must greatly exceed any conceivable future requirements of the mining industry. Nevertheless, contact must be established with these boys and the opportunities explained to them, if the industry can hope to secure its quota.

We make this comment with some diffidence as we are well aware of the efforts already being made to circularize headmasters and careers-masters with particulars of the courses provided by our mining schools, and of the opportunities offered by the industry. On the repeated evidence of the public and grammar schools themselves we feel bound, however, to re-emphasize that if more recruits to the industry are needed (and we still await the evidence of the Joint B.O.M.A./I.M.M. Committee as to whether this is in fact so), far more energetic and costly recruitment methods must be adopted.

We assert this for two reasons. In the first place information circulars either from mining schools or from industry serve only to add to the flood of such literature arriving on careers-masters' desks, and cannot in the nature of things be expected to receive special attention. Secondly recruitment by prospectus is ineffective in arousing the ordinary schoolboys' interests. What *is* likely to arouse his interest, and we received renewed evidence of this on Tuesday evening, is a direct and informal approach to the admittedly small number of boys likely to be interested in each school by someone practically engaged in the industry, who has a flair for describing the facts of mining life in terms of a boy's own experience, or at least of his own comprehension. This kind of approach is costly and it is time consuming, but it is of proved effectiveness in other professions. If the problem of recruitment has really got to be tackled, we can suggest no better way.

The Twilight of New Zealand Mining Deepens

A year ago we spoke of the report of the New Zealand Minister of Mines, issued in 1952 as portraying the twilight of New Zealand metal mining. His report for the succeeding year just received affords further confirmation of its threatened extinction. During 1952 gold production fell from 75,115 f.oz. to 59,151, the lowest recorded since 1861. It is a commonplace that old mines die hard, and though ore production from Waihi ceased in June, this famous property actually contributed 11,028 f.oz. of the total production. Its demise left the task of continuing gold

output to the dredges, and though last year's output of 46,475 f.oz. showed no big reduction on the previous year's total of 50,059 f.oz. it is clear that the outlook for the continuation of the dredging industry is increasingly dark. During the year the Austral-New Zealand Dredge at Loburn in Otago ceased work and the dredge is being shipped abroad; the Ngahere Dredge was idle all the year and the Premier Dredge Company ceased work in May and went into liquidation. Associated Gold Dredges Ltd. failed to find a purchaser for its three plants though the report points out that the greatly increased cost of a modern dredge makes installation of a new unit economically impossible.

The Gray River Dredging Company produced 9,284 crude oz. but owing to continuously mounting costs of replacements and supplies coupled with the continued rise in wage rates the time is said to be rapidly approaching when it is becoming uneconomic to work low grade gravels such as have been operated in the past and the same is true of the Snowy River Dredge with an output last year of 3,150 f.oz. The largest producer, the Kaniere Dredge—the biggest producer in 1952 with a total of 16,658 f.oz.—anticipated closing down about July or August last owing to the exhaustion of its ground, and though the dredge is to be transported and rebuilt on the Taramakau river it is not expected to be again in operation until 1956-1957. One of the most disappointing developments of the year was the failure of the Rimu Gold Dredging Company to find any worth-while new ground in the Rimu Flat area, and the dredge—the first modern plant to be established in New Zealand—was expected to close down with the exhaustion of the present area last mid-summer. As against this catalogue of trouble the Arahura Dredge which foundered in 1949 was repaired and was due to come into operation early in the current year. Generally speaking only a limited amount of prospecting for new areas was undertaken last year and the results are said to have been consistently disappointing. As little, if any, gold is likely to be forthcoming from Waihi this year and the dredging output must be considerably reduced, gold production in the current 12 months is likely to be very materially less than the 1952 output.

Metalliferous production other than gold was inappreciable, the most important item was scheelite of which 57 tons were won. In non-metallic minerals there was a production of 682 tons of asbestos, 468 tons of sulphur, 570 tons of bentonite; 221,114 tons of silica sand, 9,358 tons of serpentine, and substantial amounts of lime stone, building stone, rock, sand and gravel.

The coal industry about maintains its position but possesses little interest outside the Dominion itself. Production last year was 2,749,808 tons of which 1,914,137 was from underground workings and 835,671 tons from open-casts. There was a slight improvement in the small output of petroleum which totalled 302,870 galls. of crude. No further drilling was carried out on the Moturoa field and well No. 2d was abandoned; however, the company projects the drilling of three more holes in the future.

The Benefits of Continuous Casting

The full impact of continuous processes in metal casting may not be felt for many decades, yet since the end of the second world war the development of these processes has assumed a "healthy infancy," and already is benefiting the metals industry in a number of countries. This view was expressed by Snr. I. Properzi, president of S.P.A. Continuus, Milan, and a pioneer of continuous casting, in a recent address to the Annual International Conference of the Wire Association in Chicago.

The use of continuous processes promises to stabilize metal costs in the face of general inflationary trends by increasing the productivity of labour, decreasing the costs of capital investment and transportation, and by gearing production more closely to demand. These benefits are illustrated by statistics gleaned in the United States, where the use of the Properzi process has made it possible to produce aluminium redraw rod directly from aluminium ingot for an investment of $175,000 with a maximum labour force of three. When this expenditure is contrasted with the enormous outlay necessary to provide plant for the conventional production of rod, to say nothing of the huge labour forces necessary in the traditional methods, it is obvious that continuous processes must be regarded as revolutionary.

Mexico

(From a Correspondent)

Jalisco, Mexico, November 4.

A draft of the new Mexican Mining Law has been completed, according to Constantino Perez Duarte, Assistant Secretary of Economy. Now it will go to the Secretaries of Economy and Treasury for approval and modifications. After that it will be turned over to President Adolfo Ruiz Cortines who will decide if it is to be presented to Congress for enactment into law. Although no details of the new Law were made public, mining circles assume that one of the clauses will relate to lowering of present high mining taxes which have virtually crippled the industry.

For a number of years the Mexican Mining Chamber of Commerce as well as the National Federation of Small Mine Owners have campaigned for the abolition of "excessive" taxes which they held responsible for the "decadence" of the Mexican mining industry. It is known that President Cortines favours mining reform for he has publicly promised to give "new impetus" to mining operations.

DEVELOPMENT OF FOREIGN MARKETS

Meanwhile, the Mexican Government is making an all-out effort to open new markets for its metal production, and especially for lead, zinc and copper. U.S. demand for these three metals has fallen off in recent weeks and Government officials, as well as mining circles, see no change in this situation in the near future. Until now, the principal purchaser of Mexican lead, zinc and copper has been the United States. But as a result of fall off in production, purchases have dropped in "sizeable form" according to a Department of Economy report.

Faced with the loss of the U.S. market, Mexico now wants to develop other foreign markets for placing shipments of these metals in large quantities. To this end, negotiations are going on with various European countries, and "some sales" have been made, according to a mining industry spokesman. This source also harped on the "favourite complaint" of the Mexican mining industry in recent years, that Mexican miners cannot be "subject to the whims of U.S. purchasers and variations in offer and demand." About 85 per cent of all mining products from the Republic had been sold to the U.S. heretofore.

The charge has been made by Mexican miners time and again that on various occasions prices for metals have been "arbitrated" by U.S. buyers, and this has caused "considerable loss" to Mexican producers. For this reason, Mexico's mine operators are solidly behind Government efforts to find new markets for their products, in Europe, in South America or Asia, and to be "freed" from the necessity of selling to U.S. buyers, and "risk" of severe losses when buying dried up as it has recently. In addition, the Government is especially anxious to develop foreign markets, so that "promises" of aid to a staggering industry can become a reality.

Opportunities in Uranium Mining

This second decade of the Atomic Age may see certain nuclear power plant under civilian administration, while at the same time there is no indication that the demand for uranium ore for military purposes will decrease. Indeed, an emphasis of the bright prospects of uranium production is the keynote of the following article, which is the abridgment of an address presented before the American Mining Congress in September of this year by Mr. T. E. Gillingham, chief of the Physical Exploration Branch, Division of Raw Materials, of the Atomic Energy Commission. The author mentions the aid given by the United States Government to private enterprise engaged in uranium exploitation, and in his article deals fully with types of uranium bearing deposits in all parts of the world, making particular reference to the Colorado Plateau ores of the United States.

The basic price schedules and the various incentive payments for domestic uranium ores were established by the Atomic Energy Commission in a series of circulars, the first of which was issued in April, 1948. The incentive payments for acceptable ores from the Colorado Plateau country are (1) premiums based on grades above 0.2 per cent U_3O_8, (2) a development allowance of 50 cents per lb. of U_3O_8 contained in the ore, and (3) an ore haulage allowance of 6 c. a ton-mile, up to a maximum of $6. All three of these payments, as well as the base price of $3.50 per lb. for ores averaging 0.2 per cent U_3O_8 and higher, are guaranteed until April, 1958. There is also an initial production bonus, guaranteed until next February 28, which is paid on the first 10,000 lb. of U_3O_8 produced from a new domestic mine to help offset the cost of getting the mine started.

With regard to future prices, there is at the moment no indication that the demand for uranium will decrease within the next ten years. The A.E.C. has a capital investment in plants of about $4,000,000,000, approximately equal to the entire plant investment of the U.S. Steel Corporation.

It is anticipated that for the next ten years the majority of the world's uranium will come from the types of deposits that now yield the bulk of production. These are (1) the pitchblende-bearing veins and shear zones, (2) the reefs of the Witwatersrand and the Orange Free State, and (3) the relatively flat-lying deposits of the Colorado Plateau type. There are other types of deposits, particularly the uraniferous phosphate formations and the black shales, which are potentially large producers; and there are still others, such as the pegmatitic deposits, which are of little more than academic interest. But in seeking opportunities in uranium mining in the Western Hemisphere, disregarding the consideration of a large company interested in by-product uranium production from low grade sources, emphasis is laid inevitably on the veins and shear zones and the Colorado Plateau type deposits.

THE PITCHBLENDE VEINS AND SHEAR ZONES

Pitchblende, a variety of uraninite, is essentially an oxide of uranium. It may contain as much as 80 per cent U_3O_8, the U_3O_8 being the unit purchased by the Commission. This mineral is black and very heavy, and a small veinlet of it can be mined profitably under proper conditions.

It can be shown, for example, that a vertical veinlet averaging only ¼ in. width with a filling of pitchblende carrying 50 per cent U_3O_8, can be diluted with waste to give a 3 ft. mining width and still yield ore averaging 1.46 per cent U_3O_8. This ore would currently be worth $140.50 per ton at the mine without initial production bonus (I.P.B.) or $242.70 per ton including that bonus. If the ore shoot were 100 ft. long, there would be 26.68 tons per vertical ft., worth $3,748 without I.P.B. or $6,475 with I.P.B. It can be shown similarly that a veinlet of the same pitchblende only ¼ in. thick and mined 3 ft. wide can yield ore averaging 0.36 per cent U_3O_8, a good shipping grade, worth at the mine $31.20 per ton without I.P.B. or $56.40 per ton with I.P.B. Mr. Buffam and Mr. Gillanders, two Canadian geologists, have estimated that an orebody 4 ft. wide and 400 ft. long with an average grade of 0.25 per cent U_3O_8 would have a value of about $5,000 per vertical ft. within the present Canadian price structure.

These details show intriguing possibilities. Pitchblende need not occur in a solid veinlet to make ore. Disseminations, pods, or stringers of the mineral in a shear zone or other locus may constitute a valuable orebody. The fresh mineral can often be concentrated by gravity methods or by hand sorting. It is soluble in acids and hence may be leached from the zone of weathering or altered to a sooty, friable mass which is difficult to save in mining. If indications of pitchblende are found, they should be followed downward to the fresh material, if such a course be feasible.

COLORADO PLATEAU TYPE DEPOSITS

Production from deposits of the Colorado Plateau in several Western States now ranks the United States in second place among the world's uranium producing countries. The Colorado Plateau type deposits include all those deposits, with the exception of the uraniferous phosphates and lignites, that occur in the relatively flat-lying sedimentary rocks of the Colorado Plateau and adjacent areas of the Western United States. The orebodies are typically flat-lying, like their enclosing beds, and irregular in plan. In some respects they resemble the Tri-State and the Illinois-Wisconsin lead-zinc deposits. Many of the Plateau orebodies produce as co-products, vanadium and copper.

Individual Plateau orebodies range in size from a few tons to as much as several hundred thousand tons, but in many localities a number of small, disconnected deposits can be mined as a unit by careful planning. The average grade of separate orebodies ranges from about 0.1 per cent U_3O_8 to as much as 1 per cent, though a composite average would be closer to the lower figure. Ore thicknesses range from a few inches to as much as 15 ft., but the average would be less than 5 ft. Irregularities in plan and ore lie must be anticipated but the ore can be followed and there are many thick tabular orebodies which do not present any problem. The ore is rarely faulted, the ground generally stands well without much timber, and pumping is seldom a problem. Many orebodies can be opencast or others mined through adits or shallow inclines, and only a few of the larger, deeper deposits require expensive vertical shafts. At least two vertical shafts are already being sunk to depths below 500 ft.

The grade of the average Plateau deposit must be watched closely. The real profits are to be made from mining an average grade of 0.2 per cent U_3O_8 or higher, unless the ore is abundant and thick or unless the mine is open cast. Ore averaging 0.2 per cent U_3O_8 and 1 per cent V_2O_5 commands at mine head a price of $22.2 per ton, including the vanadium payment and the development allowance, but not including the initial production bonus. In the average small mine there is little profit in handling ore of lower grade.

The uranium miner need not consider metallurgy, as payment is made for the full content of U_3O_8 if the grade is above the minimum acceptable; for all vanadium in most cases; and for copper in excess of 1 per cent at approximately smelter rates. Certain mills with acid circuits have

difficulties with excessive lime, so that a penalty for high lime is imposed in certain areas, but this is the only penalty. Unfortunately, zinc, lead, silver and gold are not paid for at existing domestic mills, but arrangements probably could be made to handle an ore carrying these metals and to pay for them if the tonnage were sufficiently large. There are many metallurgical problems in the uranium field.

The opportunities existing in this province of uranium production may be considered under the following headings:

1. The orebodies, certainly formed after the rocks were laid down, are being found at increasingly stratigraphic horizons. Already at least 14 different formations, ranging in age from Pennsylvanian to Eocene, are known to be ore bearing and it is reasonably certain that other formations will be added as exploration continues.
2. While sandstones and sandy conglomerates seem to be the most favourable loci for orebodies, some excellent deposits have been found in limestones and a few in shaly beds. It appears that relative, rather than absolute, permeability and other physical and chemical factors, such as the presence of carbon from buried wood, have controlled the ore deposition.
3. The principal ore mineral on the Colorado Plateau has been, and still is, the potassium uranium vanadate called carnotite. This is an alteration product, but the method of formation of this and other uranium-vanadium alteration products in the ores is a matter of discussion. It is becoming increasingly apparent that these secondary products give way gradually to black pitchblende and other minerals which may be called primary. It has been concluded that the Plateau deposits are essentially hydrothermal in origin and that in mining the carnotites and other alteration products, operations have merely skimmed the surface of vast potentialities of primary ores.
4. If the plateau orebodies were deposited from hydrothermal solutions, it would follow that structural features such as faults and folds, as well as the more intimate physicochemical controls as expressed in sedimentary features, should be good guides to ore. Indeed, there is much evidence to show that faults and folds are important. Probably more important than recent fractures are the deep-seated paleo-fractures.

The A.E.C. Exploration Branch and the U.S. Geological Survey are active in the search for new ore. In the fiscal year 1953, which ended June 30, the A.E.C. and the Survey drilled 1,136,893 ft. of hole on the Colorado Plateau alone. This drilling was mostly of the reconnaissance and widely spaced exploratory type, for the policy of the United States Government is to do no more than is needed to interest private capital in a particular area. The drilling is based on the best available geological indications, irrespective of the status of land ownership. Both the small miner and the large company are benefited by this work, and to-day there are over 600 mines from which uranium is the principal product, and ore reserves are greater than ever before. The U.S. Government offers assistance in addition by granting loans for drilling and underground exploration—made by D.M.E.A.—while access roads into promising new uranium areas are built by the Bureau of Public Roads.

URANIUM SOURCES OF THE WORLD

The better known uranium-bearing areas of the Free World are widely scattered. A pitchblende deposit of importance in the Belgian Congo, near the Rhodesian border, is the famous Shinkolobwe mine, which is still the world's premier producer after 30 years of operation. Lying in pre-Cambrian quartzites and dolomitic shales of the Mine Series of the Katanga, its orebodies are localized on cross faults and in breccia zones in an area where a westward trending fault system intersects the favourable formations. The veins contain some molybdenite, tourmaline, and monazite, but no intrusive rocks reach the surface within 25 kilometres of Shinkolobwe.

Farther south in the Transvaal and the Orange Free State the gold mines of South Africa are the greatest potential uranium producers of the world. Pitchblende here is a co-product with the gold and is obtained from the post-cyanidation slimes. Profits from uranium production, which already exceed expectations, may eventually equal the profits from gold. A report of South African uranium production appeared in *The Mining Journal* of May 22, 1953.

Another potential uranium producer in Africa is the Rhodesian Copperbelt where pitchblende has been found with the copper ore in at least one of the large mines. In north-central Portugal, the Urgeirica and other mines are yielding a fair amount of good ore from pitchblende veins.

Australia has two known uranium areas, the old Radium Hill district in South Australia and the new Rum Jungle district in the Northern Territory. At Radium Hill, the uranium is in a rare iron-titanium mineral, davidite. The veins, which are 3 to 6 ft. wide for the most part, lie in a gneissic host rock intruded by dykes and plugs of granite. and amphibolites. The ore is refractory, but the metallurgy has been solved and a treatment plant is being constructed. The Rum Jungle deposits near Darwin are of the copper-uranium type. The principal uranium mineral, uraninite, is associated with pyrite and chalcopyrite, and is disseminated in broken and highly folded carbonaceous slates, which are part of a thick series of pre-Cambrian meta-sediments.

DEPOSITS IN THE WESTERN HEMISPHERE

In Canada a number of important pitchblende vein and shear zone deposits exist, the most famous being the Eldorado mine at Great Bear Lake, where high-grade pitchblende ore has been mined for many years from a series of steeply dipping veins cutting metamorphosed sedimentary and volcanic rocks. Reserves are sufficient to keep this mine working for many more years. In the Beaverlodge area of northern Saskatchewan several large pitchblende deposits have been found, both in meta-sedimentary rocks and in granite-gneiss. Already a 500 ton-a-day leach plant is being operated by Eldorado Mining and Refining Company on ore from the Ace mine. An even larger plant may be constructed soon by private interests to treat ore from the already famous Gunnar deposit, which has been reported to contain at least 2,000,000 tons of ore, averaging about 3 lb. of recoverable U_3O_8 per ton. Almost every week during the prospecting season new discoveries of uranium veins are being reported from Canada, and an article on activities in Canadian uranium properties during 1952 appeared in our issue of October 30, 1953. There are probably 10,000 claims in good standing in the Athabaska district alone, and around Beaverlodge the total investment in properties and equipment is estimated at $40,000,000. Expenditures on exploration and development there during 1953 are expected to be at least $8,000,000.

The Colorado Plateau type deposits occur extensively in Western Colorado and Eastern Utah and somewhat less extensively in Arizona, New Mexico, Wyoming and South Dakota. The largest production has come from the so-called carnotite deposits in the Jurassic Morrison formation in the Uravan mineral belt, but the Morrison deposits are also found in the Lukachukai and Carrizo Mountains of Arizona-New Mexico and elsewhere. Important production of low uranium-high vanadium ores has come from the Jurassic Entrada sandstone near Rifle, Placerville, and Rico, Colorado, and, in recent years, the carnotite and copper-uranium ores of the Triassic Shinarump-Chinle horizons farther to the west have added to the domestic supply. The areas surrounding the Plateau proper have deposits in still other formations.

The Mid-Cannock and Cannock and Leacroft Collieries Reconstruction Scheme

The reconstruction scheme merging Mid-Cannock and Cannock and Leacroft collieries into one large production unit provided the opportunity for a representative of *The Mining Journal* to join other members of the technical press in a visit to Mid-Cannock colliery to observe the scheme at first hand. Impressions gained during the visit are recorded in the following article, which focuses attention on the way in which the means of production have been modernized to secure increased production and economic working.

When the National Coal Board took over the pits now included in the Cannock Chase Area of the West Midlands Division it was evident that if adequate production was to be secured considerable reorganization and reconstruction work would be necessary. That being so, it was decided to prepare a reconstruction scheme applicable to the Mid-Cannock Colliery and the Cannock and Leacroft Collieries, the basic feature of which was to merge the two collieries into one large production unit.

As in most schemes initiated by the National Coal Board where greater output is sought by replanning and improving the mechanization of existing mines, the reconstruction and reorganization programme follows a fairly well defined pattern—at any rate in broad outline—though, of course, the detailed workings may vary enormously from one project to another. Stated in its simplest terms the reconstruction scheme under discussion involves the modernization of the means of production and transportation, and the provision of efficient means of winding the coal to the surface and preparing it for the market. Thus, in this case where economies of scale are envisaged, internal economies such as the increase in the output per man-shift is the aim without an attendant increase in the proportion of the supervisory staff to productive workers.

Galvanized steel 2½ ton cars at Mid-Cannock colliery

CONDITIONS PRIOR TO RECONSTRUCTION

Background information supplied by the West Midlands Division of the National Coal Board on these two collieries provides a brief but clear guide as to the conditions prevailing at the collieries before the reconstruction scheme was put in hand.

Mid-Cannock's shafts were sunk in 1876-1877 but were closed shortly afterwards and remained so until 1914 when the colliery was reopened under the aegis of the Cannock Associated Collieries group, and it has been in production ever since.

Geographically, the colliery is situated about a mile to the south-east of the centre of the town of Cannock while, geologically, it is located in the central plateau area of the exposed coalfield. Originally, the colliery was worked for the Deep and Shallow seams lying towards the bottom of the coal measures which, with the exception of the ground under the built-up areas of Cannock and Bridgtown, is extensively proved by workings in these lower seams. Although this central area is disturbed by both small and large faults, these are not sufficiently serious to affect the efficient projection of machine mining. In any event, underground developments subsequent to 1926 which were directed towards winning the seams lying to the west of the Mitre Fault Disturbance reached a workable area in the extension of the Littleton syncline in 1932 and later proved a substantial area by workings in the Eight Feet Seam. The inclination of the strata in this area varies from 1 to 1½ to level but it is relatively fault free.

Both shafts at Mid-Cannock are 15 ft. in diameter. The downcast shaft is 810 ft. and the upcast 846 ft. Both shafts were used for coal winding (the coal winding inset in the upcast shaft being at a depth of 420 ft.) and were equipped with steam winding engines.

The transport system underground was by means of tubs of 12 cwt. capacity hauled along 24 in. gauge track by means of endless rope haulage. The coal preparation plant consists of two main screens which deal with the sorting and cleaning of all coals above 3 in. diameter. Coals are classified into cobble (size 3-6 in.) and large coal (6 in. and above). All the coal below 3 in. in diameter is elevated from the screens to a Baum type washer, erected in 1932 by Simon Carves Ltd., where it is cleaned and classified into four grades: bakers nuts (3-1½ in.), D.S. nuts (1½-¾ in.), peas (¾-⅜ in.), and slack (below ⅜ in.).

CANNOCK AND LEACROFT COLLIERY

Previously owned by the Cannock and Leacroft Colliery Company, this colliery is situated about ¼ of a mile to the east of Mid-Cannock and is also in the plateau area of the coalfield.

As in the case of Mid-Cannock it was worked for the Deep and Shallow seams, the original shafts having been sunk in 1874-1877 and have been in production since that time.

The two shafts are equipped with steam winding engines. The downcast shaft is 13 ft. in diameter and 1,200 ft. deep and coal winding is from a depth of 1,170 ft. The upcast shaft is slightly smaller at 12 ft. 4in. diameter and is 1,167

ft. deep. Coal winding is from a depth of 735 ft.

Prior to nationalization the underground transport system was by pony haulage and self-acting inclines for the operation of 10 cwt. tubs. Since vesting date the mine has been modernized and the coal is now being conveyed to loading points near each pit inset. Machine mining has also been introduced and two Meco Moore cutter loading machines are in daily operation.

The coal preparation plant consists of two sets of screens which deal with coal of all sizes, but there is no washery.

THE REORGANIZATION SCHEME

As can be gathered from the foregoing brief descriptions of the two collieries, Mid-Cannock is much more suitable to become the main site of operations. In fact, when the scheme is completed Cannock and Leacroft will be treated as an extension to Mid-Cannock's existing workings and all coal mined will be dealt with at that colliery's plant. Moreover, the coal reserves available at Leacroft Colliery within the boundaries of the old colliery " take " do not amount to more than 3,000,000 tons which is insufficient to justify reconstruction on a large scale; whereas the total reserves available to Mid-Cannock and Leacroft collieries together exceed 20,000,000 tons and are so disposed that by re-planning, an output of 700,000 tons can be maintained for approximately 30 years.

The first step in the reorganization scheme was taken in June, 1950, when the West Midlands Divisional Board approved the driving of a level tunnel to connect Cannock and Leacroft workings with Mid-Cannock. When the connection is completed two full shifts winding will become necessary, substantial economies in surface labour will be effected and the small coal mined at Cannock and Leacroft will then be treated at the Mid-Cannock washery.

The link-up will not take very long. At the end of last week not much more than 500 yards remained before the coal from Cannock and Leacroft No. 2 pit area could be dealt with at Mid-Cannock. Day-to-day driving on this connecting road is being carried out by a team of four men using two hand-held Siemens-Schuckert electric drills. The rock formation is a mixture of standstone and " bind " and a round, which is drilled off in 2 hours, consists of 30 holes, each 9 ft. deep. Drilling pattern is based on the V cut and short delay blasting is used.

The reconstruction scheme consists of locomotive haulage with 2½ ton mine cars underground, the concentration of all coal winding at Mid-Cannock downcast shaft, with a short closed car circuit at the pit top and a run-of-mine 42 in. belt system to the coal preparation plant.

The car circuit and the belt system were completed in August of this year by which date 9,093 ft. of locomotive haulage and cross measure drifts had been driven, enough to install the locomotives and the 2½ ton capacity cars. In this connection, the colliery is currently employing 3 Ruston Hornsby 75 h.p. diesel double-ended locomotives of the type illustrated on this page and one Hunslet 70 h.p. diesel locomotive, while the 2½ ton cars, which can also be seen illustrated opposite, are of galvanized steel and are supplied by Allen of Tipton.

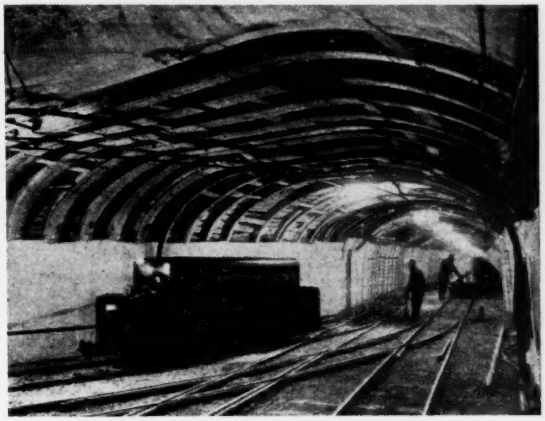
The steam winder at the Mid-Cannock upcast shaft was replaced by an electric winder during the August holidays of 1952 and preparations are being made for the installation of a large electric winder at the coal drawing shaft during the summer holiday period next year. When this has been done, the use of compressed air as a motive power will then be dispensed with, except for that provided for the four electrically driven compressors, for the operation of the Westinghouse gear about the shaft top and bottom, and the two steam driven compressors will no longer be required.

Both the main and standby fan drives are to be electrified which will be accomplished by August next. This will eliminate the need for the steam raising plant thereby effecting an annual saving of 15,600 tons. The steam winding engines at Cannock and Leacroft will be replaced by small electric winders.

Alterations are also to be made to the coal preparation plant at Mid-Cannock Additions to the washery for treating coal up to 6 in. have been planned as well as new screening plant with picking belts for the preparation of all coal over 6 in. for marketing.

Any scheme contemplating improvement of the means of production must, of course, extend right through to the use of the coal getting machines. Unfortunately, there was not time for an examination of the face workings, so that there was no opportunity to see the Dowty and Titan props nor the conveyor section where the Scandura P.V.C. belting was still functioning after 18 months' operation. However, it was possible to get a glimpse of the Cowlishaw-Walker chain conveyor which is being used as a retarder, and a Distington Goodman duckbill loader which is cleaning up the main rock heading connecting the two collieries.

One particular aspect of the improvements already noted was in the lighting arrangements for the loco roadways.



A Ruston Hornsby 75 h.p. diesel double ended locomotive underground at the Mid-Cannock colliery

These were all fluorescent and their effectiveness can be readily appreciated from the illustrations shown on these pages. In fact, the 150 non-flameproof 2 ft. 40 watt fluorescent lighting fittings for the loco roadways were supplied by the Simplex Electric Co. and installed along the roadway at 24 ft. intervals at an average mounting height of 10 ft. 6in.

While much remains to be done before this £1,250,000 scheme will be completed the following table clearly demonstrates the benefits already derived.

Manpower	*Mid-Cannock Colliery July 1953*	*Mid-Cannock Colliery October 1953*	*Leacroft Colliery July and October 1953*
Coalface	402	446	334
Others underground	550	483	314
Surface	287	244	228
	1,239	1,173	876

But perhaps the best indication of all of the scheme's efficiency is that whereas before August, 1953, Mid-Cannock was producing an average of 29,233 tons per month, since August last its average monthly production has exceeded 40,000 tons, the precise average being 40,399 tons per month. In terms of output per man-shift this indicates a rise from 23 cwt. to 30.2 cwt. Output at the Cannock and Leacroft Colliery continues at approximately 30,000 tons per month.

B.I.S.R.A.'s New Laboratories

The rapid development taking place within the iron and steel industry of the United Kingdom was given added prominence last week when H.R.H. the Duke of Edinburgh opened the new laboratories of the British Iron and Steel Research Association (Bisra). The Association came into being in 1945 for the purpose of collective research on behalf of the industry as a whole, and in the following article the author indicates some of the research now being undertaken at the new laboratories.

The British iron and steel industry is at present engaged on the largest development programme in its history, costing many millions of pounds. Recognizing that the sellers' market for its products would not last indefinitely, the industry has long realized that the future value of this huge investment will depend, among other things, on taking full advantage of the most up-to-date technical and scientific knowledge. Since the war the total staff employed by the principal steelmakers in their own research departments has almost trebled. The co-operative research activities of the industry have been expanded even more. In 1945, the British Iron and Steel Research Association (Bisra) was set up to gather together various research projects, which were being collectively sponsored by the industry, and to extend the work to other fields

A notable event in the history of the Association took place on November 19, when Bisra's new Sheffield laboratories were opened by H.R.H. the Duke of Edinburgh. Built and equipped at a cost of £500,000, they house the greater part of the Association's laboratory facilities for steelmaking, mechanical working and metallurgy.

VALUE OF CO-OPERATION

The co-operation between Bisra's research staff and open hearth furnace managers has had such noteworthy results in the improvement of open hearth furnace design and operation that the United Kingdom now leads the world in this field. Each advance made possible by the study of heat transfer, gas flow, and the use of instruments, has been tested and put into practice by the open hearth furnace managers, who have worked with the research staff throughout the investigations. The improved designs have increased production, saved fuel, and simplified construction. Ancillary investigations have provided better refractory materials.

According to the Iron and Steel Productivity Report, basic open hearth steel accounted in 1950 for 88.7 per cent of the total U.S. ouptut and 81.8 per cent of the total U.K. output. Steel making has developed along different lines in the two countries, because more scrap is used in Britain and British iron has the highest sulphur and phosphorus content in the world. The British steelmaker has to remove three to ten times as much phosphorus from his basic iron as his American competitors, and he must do this in the face of a higher sulphur content. The U.S. also has the great advantage of cheap and abundant fuel oil and natural gas, with which over 90 per cent of its open hearth steel is made.

Open hearth steel may be produced by the "cold metal process," using a high proportion of scrap together with a low proportion of cold pig iron, or by the much more productive "hot metal process," using molten iron with a proportion of scrap. It is very relevant, therefore, that the cold metal process accounts for 42.8 per cent of capacity in Britain and only 9.2 per cent in America. On the other hand, the fixed furnace hot metal process accounts for 34.5 per cent of the capacity in Britain and 77.4 per cent of that in America. The tilting process, which is of growing importance in the U.K., has a creditable productivity performance, but its driving rate could be increased, possibly by the introduction of some intermediate refining. The acid duplex process yields very high productivities in the U.S., but requires additional plant in the shape of Bessemer converters. The Productivity Team recommended that, where conditions are favourable, it should be introduced to Britain.

It is evident that British steelmakers are critically dependent on research to overcome the difficulties arising from the inferior materials they are required to use. Productivity depends in the first place on how fast the cold raw materials can be melted, and secondly on how quickly they can be refined to give a product of the required composition. Fast refining calls for a low content of impurities in the refined metals and a high rate of reaction between the metal, slag and furnace atmosphere. Phosphorus removal needs an oxidizing condition, while sulphur removal prefers non-oxidizing conditions. The high contents of these elements therefore result in a high slag burden and longer melting and refining times. On the other hand, output can be improved if some of the sulphur, silicon and phosphorus can be removed before the furnace is charged. These problems are studied at Bisra's Sheffield laboratories.

Since the refining slag lies on a separate layer and above the metal, the speed of reaction depends largely on the degree of agitation. A study of the efficiency of various means of agitation is being made, using simple model systems of two immiscible liquids containing a reagent, and also actual metal and slag. A gold "model" slag/metal system is being used to investigate the agitation efficiency produced by various gas-blowing methods. One way of intimately mixing iron and slag is to atomize the molten iron and drop the resultant globules through a molten desulphurizing slag. In all Bisra's experiments, a maximum removal of sulphur has occurred with metal droplets of relatively large size.

The most practicable way of releasing the sulphur content of iron before it is charged to the steel making furnace is to use sodium carbonate. The iron is tapped from the blast furnace into a ladle containing the required amount of sodium carbonate powder. The resulting soda slag must be skimmed off the top of the ladle before pouring to avoid damaging the furnace refractories. Bisra have studied the efficiency of usage of sodium carbonate and the best means of separating the soda slag.

INCREASING USE OF ELECTRIC FURNACES

Although only a small proportion of British steel is made in electric furnaces, the proportion is steadily increasing. The steel-making facilities at Sheffield include a 10 cwt. arc furnace, which is being used in attempts to widen the range of steels that can be made economically in electric furnaces, with consequent advantages in quality. Many types of steel are such border-line cases that quite small economies in production would make the electric process competitive. Successes have already been achieved in work on electrode consumption, which offers one of the major fields for economy. Further experiments on a small scale on protective coatings for electrodes have given promising results. The arc furnace has, for its size, a very large maximum power input per ton of steel—500kW. per half-ton charged. Experiments at Sheffield have shown that a larger power input rate per ton of steel during melting down progressively decreases power consumption without seriously affecting refractory wear or electrode consumption.

Bisra's work on ingot moulds is saving steelmakers substantial sums by improving the yield of high speed steel ingots.

MACHINERY AND EQUIPMENT

High Rate Stockpiling and Loading Equipment

The combination of the Loband Loader and improved Hylo-veyor, manufactured by C. H. Johnson (Machinery) Ltd., is now proved a success for the stockpiling of loose bulk materials brought to site in end tipping and telescopic lorries. The equipment eliminates the necessity for tipping on the ground and then piling with shovel or grab and backing lorries up the pile. Both machines are highly mobile and can quickly be towed from one site to another. Tractors are not required to maneouvre the machines as the pile grows, as the unit can be easily manhandled.

The unit in operation

The Loband Loader can feed at any angle up to right angles around the Hylo-veyor hopper. This is a useful point in eliminating awkward approaches for the lorries. Indeed, rates of 260 tons per hour in coal and 100 tons per hour in coke are being obtained, and one set of equipment is handling chrome ore up to 12 in. lumps with a density of 150 lb. per. cu. ft. For this latter application the Loband Loader has a special heavy hopper and belt, and shock absorbing idlers. This method of stacking has doubled the tonnage that could be stored by previous methods.

Among the many applications of this equipment is use at an N.C.B. washery plant, where open cast coal is loaded into railway trucks and, in this instance, the units are also used for general stockpiling. The Loban Loader is also used as an emergency feeder for the washery plant. The main intake is by railway wagon tippler. If the tippler goes out of commission, the coal is brought in by lorry, tipped into the Loband Loader, which in turn feeds the main elevator.

An unusual application for the Loband Loader is at the B.E.A. Bold power station. Here it is being fed by bulldozer and in turn feeds a temporary conveyor up to the bunkers of the boiler house, providing the sole intake for coal until the main intake conveyor from the colliery has been installed.

In an operation by English Clays, Lovering, Pochin Ltd., installed at Par Harbour, the machines load lorry-borne china clay into ships. This clay ranges from dust to 12 in. lumps, and loading can start immediately the holds are opened up, irrespective of the state of the tide. Eleven 5 cu. yd. lorries are unloaded in 30 minutes. Clay of varying classes is loaded at a rate of upwards of 150 tons per hour.

Our illustration shows a set of equipment recently supplied to Dorman Long and Co. Ltd., Middlesbrough, for the stockpiling of furnace coke. This example is of interest because this company is feeding the equipment by means of large steel-bodied vehicles of 10 cu. yd. capacity.

Coke is also stockpiled by a 62 ft. Hylo-veyor and Loband Loader combination, to a height of 27 ft. direct from lorry, at the Birkenhead Gas Works of the North Western Gas Board. These machines can be supplied to stock to 30 ft. height.

The Loband Loader is a multi-purpose machine. By fitting additional plates to the hopper, it can be used in conjunction with a bulldozer for recovery from stockpile. In its standard form it can also accept material from large mechanical shovels, and crane grabs. By fitting this machine with slewing wheels and incorporating a longer boom, it can be used for loading barges by means of end tipping lorries. This same version used on refuse tips prevents the lorries from going too close to the edge of the tip.

When the soft nature of ground dictates the use of dumpers to bring the material to the stocking site, the Loband Loader can be made to accept the low ground clearance of the tipped skip, by placing the Johnson mobile ramp against the loaded hopper.

A Totally Enclosed Squirrel Cage Motor

The latest addition to the range of totally enclosed motors manufactured by Newman Industries Ltd. is a fan cooled squirrel cage foot mounted unit with outputs from ½ h.p. to 25 h.p. to the draft B.S.S. CN(ELE) 6814.

This new range is for operation on 3 phase A.C. supply at 50 cycles with voltages up to 650 volts, and standard dimensions are similar to those laid down in the existing N.E.M.A. standard except for the smallest British frame for which there is no corresponding N.E.M.A. size. The outputs from a given frame are greater than for N.E.M.A. in accordance in normal British practice.

On the standard motor the terminal box is on the horizontal centre line and is fitted on the left hand side looking on the drive end. This position can be changed to the right side by reversing the stator. The cable outlet can be set at four positions at intervals of 90 deg.

A Light-Weight Rock Drill

Following successful trials and application in various parts of the world, the performance of the Atlas 754 high speed rock drill is stated by the manufacturers to make it an effective machine for tunnelling, drifting and subterranean drilling. Adhering to the principle of a light-weight machine, delivering many light blows as opposed to the fewer heavy blows of the drifter, the 754 has been built to deliver 3,050 blows per min. This piston speed is about 50 per cent greater than other light-weight drills of approximately the same size.

The machine has been successfully used in soft and hard

The Atlas RH754IW rock drill

grounds in coal measure strata operating on both high and low air pressures, and although the unit is built for operating at 85 lb. sq. in. it can be used successfully with lower air pressures. As the air pressure available at a number of collieries is often below this figure, there are obvious advantages of a high-speed machine which can operate on low air pressures without the need for in-bye compressors which often means that a considerable saving can be effected in capital expenditure on short term planning projects.

At a N.C.B. colliery a 754 drill operating on a pressure of 68 lb. sq. in. drilling in laminated blue shale gave an average net penetration of 21 in. per min. using a drill steel with a bit diameter of 39 mm. The average gross drilling speed over the whole round of 36 holes was 19 in. per min. At another colliery in hard post operating on an air pressure of 84 lb. sq. in., 75 ft. of drilling was done in a gross time of 53 min. giving a gross penetration speed over the whole round of 17 in. a min. in a roadway 14 ft. by 10 ft. high, all holes being drilled off the floor. This necessitated the use of an extension leg while drilling the top holes.

The Atlas RH7541W rock drill of alloy steel incorporates a compact drill steel retainer which cuts out the need for bolts, lock washers and springs. Refinements include the two exhaust ports designed to discharge the exhaust air away from the operator. By virtue of the valve arrangement in the back head, water or air flushing can be effected without interfering with the operation of the machine. One of the main features of the 754 is the piston which has two types of spline cut into it, thus eliminating the need for a rifle bar. This means the machine is of simpler construction than the rifle bar type and is more effective in continuous operation.

Dimensions of the unit are, piston diameter 2.95 in., stroke 1.77 in., overall length 24 in., weight 48 lb., air consumption at 85 p.s.i. 127 c.f.m., blows per min. 3,050, flushing water consumption 1 gal. p.m., and rotation 175 r.p.m.

A Big Output Earth Mover

The range of excavators manufactured by Ransomes and Rapier Ltd. needs little introduction, and the Rapier 424 is a big output machine which has won a worthy place among the equipments manufactured by the company. The Rapier 424 gives continuous performance and its components are permanently aligned in rigid welded steel frames. The unit is fitted with fluid coupling drive.

A feature of the machine is the interchangeable equipment pieces which may be fitted according to the demands of specific operations. These include a shovel, for all shovelling duties from earth moving to quarrying, a dragshovel for trenching or other excavation below ground level, and a skimmer for shallow excavation and surface levelling. The same boom and auxiliary gantry is used for dragshovel and skimmer equipments. The other equipments provided are a dragline, grab, crane and pile driver, and these, in turn, are fitted on a specific type of boom.

In so far as the shovel is concerned, that fitted to the Rapier 424 is of $\frac{3}{8}$ cu. yd. struck capacity. It is capable of heavy work in mine and quarry. The dragshovel has a rounded bottom and open top, fills readily and discharges cleanly. Various side cutters are available to give digging widths varying from 3 ft. to 3 ft. 8 in. The skimmer bucket is fitted with easily renewable teeth and side cutters.

For the long boom equipments (dragline, grab, crane and pile driver) the normal length of the lattice boom is 40 ft., but extension pieces give lengths up to 50 ft. It is interesting to note that the low ground pressure and mobility of the Rapier 424 dragline is valuable for land drainage, reclamation and general catchment work.

The crawlers are high grade cast steel self-cleaning pads and are connected by hard steel pins. Travel motion is by bevel gear and the clutch shaft is across the centre. Steering is obtained by driving one crawler while the other crawler is locked to the frame by dog clutches and both crawlers can be locked to the frame for digging.

An Automatic Direct-on Contactor Starter

The type VO30 wall mounting automatic direct-on contactor starter manufactured by the Belmos Company Ltd. is at supply up to 650 volts A.C. at a capacity of approximately 15 h.p. at 440 volts. The sheet metal housing of the unit has two compartments, the upper containing the contactor and overloads, the lower containing the isolating switch.

The three-pole air break contactor has contacts of a large capacity made of copper of high welding point, and a feature is that there are no flexible connections. The operating coil is protected by two H.R.C. control circuit fuses and the starter is rated for frequent duty in accordance with B.S. 587.

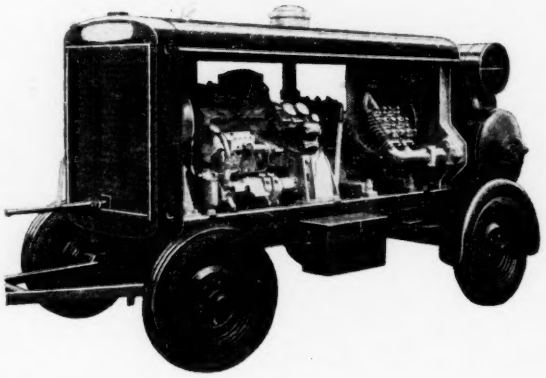
A 60 amp. off-load isolating switch is provided, and among the protective features of the unit is the triple pole solenoid relay with dashpot time lags of the two rate type, giving protection against normal overloads while permitting surges of short duration during starting. In addition, under voltage release is inherent in the contactor operating coil, and back-up H.R.C. fuses can be fitted, rated to give short circuit protection only, while the overload relay gives protection against normal overloads.

The Belmos Company has now opened a new showroom at Columbia House, Aldwych.

Two-stage Air-cooled Portable Compressors

The two-stage air compressor offers important advantages over the single stage unit, in which air is compressed from atmospheric pressure to 100 lb. p.s.i. in each cylinder. In the two-stage compressor, on the other hand, air is cooled to approximately 30 lb. p.s.i. in the low pressure cylinder, and after moving through the air-cooled intercooler it passes into the high pressure cylinder where it is finally compressed to 100 lb. p.s.i. before entering the air receiver.

The final discharge temperature is approximately 200 deg. F. less than would be obtained with single stage compression. Several advantages accrue from this realization, as due to the



The type ACD 210 mounted on springs and pneumatic tyred road wheels

absence of heat practically no carbon forms and the deterioration of hose pipes through oil and moisture is considerably retarded.

An interesting range of these compressors is manufactured by The Lead Wool Company Ltd., comprising some eight units. In these machines, c.f.m. displacement varies from 74 to 250 and actual delivery from 60 to 210, at forces of 1,150 r.p.m. to 1,500 r.p.m. Stroke rises from 3 to 5.

Among units of the range is the Type ACP 20, which is powered by a Newage Austin 4-cylinder overhead valve petrol engine, and which has a displacement of 74 c.f.m. and an actual delivery of 60 at 1,500 r.p.m. The Type AC 2 compressor, as fitted to portable machines Types ACP 20 and ACD 20, is a two-stage twin-cylinder air-cooled engine, of like displacement and revolutions as the units mentioned.

The Types ACP and ACD 105 provide 130 cu. ft. displacement and are fitted respectively with a Meadows petrol engine and a Petter B4. Actual delivery in each case is 105 at 1,200 r.p.m.

The manufacturers' latest addition to this range is the Type ACD 210 machine, which has a piston displacement of 250 cu. ft. per. min. It is powered by a Meadows 4 DJ 420 engine (4-cylinder) and develops 60 h.p. at 1,375 r.p.m. Bore and stroke are 130 m/m. The AC 7 compressor as fitted to the unit, has a displacement of 250 cu. ft. per min., an approximate free air delivery of 210 cu. ft. per min. at a speed of 1,375 r.p.m., and a stroke of $4\frac{7}{16}$ in. The complete weight of the portable machine is 2 tons 16 cwt.

METALS, MINERALS AND ALLOYS

Prices on the London Metal Exchange have been generally firm this week, especially for tin. However, two major uncertainties are still unresolved. In copper we have the problem of the disposal of the unsold Chilean stocks and in tin the outcome of the International Conference now proceeding in Geneva. The outcome in either case seems likely to determine not only the market activity and price of either metal but to influence the tone of the metal markets generally.

COPPER.—Copper prices, in common with those of the other industrial metals, have trended upward this week, presumably on anticipations that the excessive stocks held in Chile would be taken care of by the United States. The difference in tone of the reports from Washington and Santiago continues. The State Department in Washington is said to be awaiting a reply from the Chilean Government approving the proposals made previously for the purchase of surplus copper, but apparently the finance, mining, and foreign relations committees of the Chilean Senate have still to report their findings to the full House. Although the formal conferences between the officials of the two countries have been suspended for some three weeks, informal talks are reported to have been going on and it had apparently been hoped that a definite announcement would be forthcoming during the current week. It is further stated that a member of the Chilean Chamber of Deputies, Sr. Baltazar Castro, is going to Europe to try and effect some sales to the Iron Curtain countries. This may mean anything or nothing, but it seems possible that the Chilean administration believes that it holds "the joker" in these negotiations and that Washington is not prepared to risk a severe break in the copper market, which the resort to free selling might entail, and that by delaying to make any settlement with the United States, better terms may be extracted. Anyway, there is no further definite news of an agreement this week, and the remark attributed to Sr. Fenna noted in our issue of last week that if talks were renewed, it would only be when his Government thought it convenient to do so, may be recalled. In this connection the warning of Mr. Prain to the shareholders of Mufulira and Roan Antelope, reported elsewhere in this issue, that the price of copper was almost certainly likely to be less in the current year than in the previous one is significant.

On the whole the reports of the big Copperbelt companies available this week are generally favourable, both as regards the nearer and the more remote future. The output of Rhokana for the 12 months ended last June showed 93,317 tons from Nchanga, as against 68,816 in the previous year, and 74,216 tons from Nkana and Mindola properties compared with 75,562 in the previous year. The production of Mufulira at 76,089 tons compared with 76,369 tons, and but for the strike should have reached some 90,000 tons. Roan output was 87,307 tons last year. The carrying capacity of the Rhodesian railways to move coal has been improved and it is at present ahead of Wankie's production. With the successful outcome of the negotiations with the Union Minière for electric power from the Congo and the decision to proceed as quickly as possible with the Kafue hydro-electric scheme, the prospects of an adequate supply of power both in the near and the more distant future are at last really assured. Costs delivered at Beira last year were £108 11s. 5d. per ton for Roan and £109 8s. 3d. for Mufulira.

In the United States, buying for December shipment is reported steady with supplies tight, but for the purchasing was largely confined to replacements. Fabricators reported consumption in October as 116,259 s.tons as against 111,805 in September.

LEAD.—Lead has been a quiet, if fairly steady, market on the London Metal Exchange this week. In the United States price remains at 13.50 c. but there has been a slight improvement in the Gulf export price. Mr. C. R. Ince, the Vice-President of the St. Joseph Lead Co., addressing the Association of American Battery Manufacturers, forecast a balanced market with no large price fluctuations either way. He computed U.S. consumption at some 1,100,000 s.tons yearly, of which secondary lead would provide some 475,000 s.tons, domestic mined production around 300,000 s.tons, with 325,000 s.tons available for foreign imports. In explanation of the large estimate of secondary lead he recalled the old slogan that lead is an "imperishable metal." Some 60 per cent of all lead put into service was theoretically recoverable but actually only 40/45 per cent was being reclaimed, though that percentage was a big improvement on the pre-war recovery. There was thus a huge reserve of lead within the United States which, given further improvement in the mechanics of scrap recovery, might well become the most dominant factor in future supply. November bookings in the U.S. are said to be satisfactory.

The Danish paper, *Social Demokraten*, states that the work being carried out by the Scandinavian Mineral Society at Mestersvig, in East Greenland, has so far yielded disappointing results. The deposits are being prospected by a company which comprises 55 per cent Danish, 30 per cent Swedish, and 15 per cent Canadian capital. Shortage of capital it is feared may bring operations to a standstill, but if further finance can be secured it is thought that 600,000 tons of ore may be won.

TIN.—Tin has advanced sharply this week, cash up to Thursday being £33 15s. a ton, and three months £32 15s. per ton above last Thursday's close; the U.S. price has advanced to 86.50 c. per lb. nom. This rise is presumably due to optimistic views regarding progress at the Geneva Conference. Reporting on the first week's proceedings, Reuter's agent there quotes the delegations gnerally as more hopeful, with one member saying, "We have by no means solved any of our outstanding problems but neither are we deadlocked." Apart from Geneva hopes there is little news on which to base the confidence of the market. Besides the increased Indonesian output in October, noted last week, that of Malaya was also higher at 4,879 tons, making the third successive month which has shown an increase. The Congo output in October at 1,960 tons was the highest since June, 1947. These latest results certainly suggest that with the prices now ruling we should not look for any curtailment of output due to price being uneconomic. United States' consumption in August at 6,619 tons (4,260 tons primary metal) showed little change from the 6,580 tons (4,330 primary) in July. What the consumption in the two subsequent months was we do not know, but it is now hoped in some quarters that the worst of the tinplate slump has been passed.

U.K. consumption in September improved to 1,820 tons, but the rate so far this year has been running well below that of the three previous years. Imports of concentrates into the United Kingdom in October were heavy at 6,282 tons, of which Bolivia contributed 5,206 tons, making arrivals of Bolivian material for the first ten months 40,655 tons out of a U.K. total of 51,019 tons.

The R.F.C. dies hard. Up to the time when the agency's loan authority expired at the end of last September it had accumulated loans and other commitments to a little over $1,000,000,000 and a brochure has been issued listing all the assets and supplying details of an active liquidation programme. The present authority of the Corporation to operate the Texas smelter extends to June 30, 1956, so failing any disposal to private interest Governmental operation seems assured for some years to come. The U.S./Indonesian negotiations regarding price on the third year of the contract have again failed and will be continued probably next year.

ZINC.—The general market pattern shows no change. Metal Exchange quotations have eased slightly as the week advanced.

ALUMINIUM.—Increased availability of aluminium for civilian uses is expected to absorb the big increase in production in the U.S. this year, which it is estimated should reach some 1,250,000 s.tons. Shipments of aluminium materials may reach the record figure of 1,700,000 s.tons in the current year, about 350,000 tons in excess of shipments in 1952, without allowing for additions to the national stockpile. The Defence Mobilization Board is understood to be now considering the question of the third round of aluminium expansion, more particularly co-operation with Canadian producers. The requirements of the Olin industries should also be further considered.

TITANIUM.—The production of titanium is now making rapid progress. A member of a Senate Sub-Committee stated in

Washington this week that the current U.S. output was at the rate of 2,300 tons yearly. Du Ponts are constructing a new plant which will increase their current output of 2½ tons a day to 10 tons in the next year.

Current production of titanium is stated to be limited by the availability of sponge at present but notwithstanding production should reach between 500/600 tons this year, which is a four-fold increase on 1952. Titanium sponge and metal have been placed under U.S. Government control. In Japan the Titanium Association intends to boost production in the next fiscal year eight times to 1,330 tonnes. Six manufacturing companies are expected to produce about 160 tons in the current fiscal year, but dates of completion have been delayed at the Osaka Titanium Company's plant.

TUNGSTEN.—There are a few isolated buyers about, but generally speaking the market remains exceedingly quiet. We call the price, 185s.-195s. for wolframite, and 170s.-180s. for scheelite. The Ministry of Materials has again lowered its selling price by 15s. per unit to 210s. for wolframite and 195s. for scheelite. In the U.S. the price is reported slightly easier at $28 c.i.f. per s.ton unit.

Iron and Steel

There is no disposition to take an alarmist view of the engineers' decision to stage a one-day token strike next week, but its effect upon commodity markets has not been entirely negligible. Buyers of iron and steel have been in a hesitant mood this week. Their inclination is to await developments. If the pause is merely temporary it is not of serious moment. Steel makers have an abundance of work in hand and have not yet overtaken all the arrears in delivery. Indeed, after a visit to north-east coast shipyards, Mr. S. Wingfield Digby, Civil Lord of the Admiralty, has affirmed that although the steel plate situation has "improved considerably" it will take two years to increase steel plate productive capacity to meet the needs of the shipbuilding industry in full.

The pressure for light sheets is scarcely less intense. Bigger export quotas have been fully taken up and some heavy shipments of sheets to Argentina are due next month. Requirements of the motor industry are also exceptionally heavy, and all the mills working to the limit of their capacity are imposing heavy demands upon the producers of sheet, bars and slabs.

Pressure for sections has eased off a little but there are plenty of specifications in hand and re-rollers are singled out as the only victims of a diminishing demand. Export prices quoted by European makers of merchant bars are £4 to £5 per ton below British figures and although the home market is secure from invasion, this means that overseas business is almost unobtainable.

The stock position is entirely satisfactory. Over 1,000,000 tons of steel were held by the makers at the beginning of the fourth quarter of the year and some 827,000 tons of pig iron. With such huge reserves there is no danger of a recurrence of the iron and steel shortage of 1952. Moreover, substantial reserves of iron ore have been built up, but there is growing anxiety about scrap supplies. Steel users are not getting the deliveries they require and it looks as though much heavier tonnages of foreign scrap will have to be imported. Germany has again become one of the powerful exporters of scrap and October shipments from this source to the U.K. reached a total of 31,000 tons. Scrap merchants expect further big tonnages will be available for shipment in view of smaller requirements of the German steel industry.

The London Metal Market

(From Our Metal Exchange Correspondent)

The undertone in all markets has remained good, and there have been fireworks in the tin market. It is impossible to account for the rapid advance in the tin price as nothing official has yet become known about the Conference, and it is reasonable to suppose that even if some kind of scheme is agreed upon it will be many months before the necessary ratifications have been made, and thereafter a further period for the weight of over-production of the metal to be removed from the world market. The rise has taken place with extremely small turnovers, and the Singapore price has obviously been following the London market. On Thursday the Eastern price was equivalent to £662¼ per ton c.i.f. Europe.

The lead market has remained steady with a moderate turnover fairly equally spread over all months.

Zinc has again been active with a good demand both in the U.K. and on the Continent, but stocks in America are still growing.

Copper has remained firm, with most interest being shown in metal for delivery between now and the end of the year: dealings in the forward position have been smaller than of late, which is surprising in view of the apparent stabilization of the backwardation and the general feeling throughout the world that the copper price is now too high. There are signs that the lull in demand over the end of the year is approaching, and it is to be expected that all metal prices will show some slight recession between now and the middle of January.

Closing prices and turnovers for the week are given in the following table:

	November 19		November 26	
	Buyers	*Sellers*	*Buyers*	*Sellers*
Tin				
Cash	£635	£640	£657½	£660
Three months	£620	£622	£647½	£650
Settlement	£637½		£660	
Week's turnover	405 tons		570 tons	
Lead				
Current month	£94	£94¼	£92½	£93
Three months	£90½	£90¾	£90	£90¼
Week's turnover	1,725 tons		3,000 tons	
Zinc				
Current month	£75¾	£76	£73	£73¼
Three months	£74¾	£75	£73	£73¼
Week's turnover	5,700 tons		6,750 tons	
Copper				
Cash	£236½	£237	£235½	£236
Three months	£225¾	£226	£225¼	£225½
Settlement	£237		£236	
Week's turnover	2,750 tons		3,925 tons	

NOVEMBER 26 PRICES

COPPER, TIN, LEAD AND ZINC

(See our London Metal Exchange report for Thursday's prices)

ANTIMONY

English (99%) delivered, 10 cwt. and over .. .. £210 per ton
Crude (70%) .. .. .. £200 per ton
Ore (60% basis) .. .. .. 22s./24s. nom. per unit, c.i.f.

NICKEL

99.5% (home trade) .. .. £483 per ton

OTHER METALS

Aluminium, 99·5% £150 per ton
Bismuth (min. 4 cwt. lots) 16s. lb.
Cadmium (Empire), 13s. 10d./14s. 4d. lb.
Chromium, 6s. 5d./7s. 6d. lb.
Cobalt, 20s. lb.
Gold, 248s. f.oz.
Iridium, £60 oz. nom.
Magnesium, 2s. 10½d. lb.
Manganese Metal (96%-98%) £225/£262
Osmiridium, £40 oz. nom.
Osmium, £65/£70 oz. nom.
Palladium, £7 15s./£8 10s. oz.
Platinum, £27/£33 5s.
Rhodium, £42 10s. oz.
Ruthenium, £25 oz.
Quicksilver, £61 15s. ex-warehouse
Selenium, 30s. 6d. nom. per lb.
Silver 74d. f.oz. spot and f'd.
Tellurium, 15s./16s. lb.

ORES, ALLOYS, ETC.

Bismuth .. .. 40% 6s. 3d. lb. c.i.f.
30% 5s. 0d. lb. c.i.f.

Chrome Ore—
Rhodesian Metallurgical (lumpy) £14 8s. 0d. per ton c.i.f.
" " (concentrates) £14 8s. 0d. per ton c.i.f.
" " Refractory £14 0s. 0d. per ton c.i.f.
Baluchistan Metallurgical .. £15 19s. 6d. per ton c.i.f.
Magnesite, ground calcined .. £26 - £27 d/d
Magnesite, Raw .. .. .. £10 - £11 d/d
Molybdenite (85% basis) .. 102s. 4d. - 103s. per unit c.i.f.
Wolfram (65%) .. .. .. World buying £185-£195
" " .. .. .. 225s. nom. U.K. Selling
Scheelite .. .. World buying £170-£180
" .. .. 210s. nom. U.K. Selling
Tungsten Metal Powder .. .. 19s. 6d. nom. per lb. (98% Min. W.) (home)
Ferro-tungsten .. .. .. 16s. 6d. nom. per lb. (home)
Carbide, 4-cwt. lots .. .. £35 13s. 9d. d/d per ton
Ferro-manganese, home .. .. £52 10s. 0d. per ton
Manganese Ore Indian c.i.f. Europe (46% - 48%) .. .. .. 7s. 11d. - 8s. 4d. per unit
Brass Wire .. .. 2s. 5¾d. per lb. basis
Brass Tubes, solid drawn .. 1s. 10d. per lb. basis

THE MINING MARKETS

(By Our Stock Exchange Correspondent)

Kaffirs presented a more cheerful picture. Among finance houses, Consolidated Goldfields, Consolidated Mines Selection, and Johnnies were to the fore. Randfontein reached a 16-year peak on the news that an extension to the uranium plant was planned. Most of the advances in other individual mines were among the uranium producers and certain other popular counters. The disappearance of the gold premium price had little immediate effect on the market but it was noteworthy that Crown Mines, Consolidated Main Reef, Modderfontein East and Robinson Deep, all of which have been earning useful additions to their profits from this source, remained unchanged.

In the O.F.S., the prospect for the repayment of some of the loans to the Freddies mines in 1954 and realization of the greatly increased stake by Johnnies in these properties caused a fall in the group's share prices. St. Helena were again down; it seems that much of the recent labour trouble can be attributed to the disciplining of miners who took cigarettes underground. The presence of methane gas makes strict regulations essential. Harmony were still the most popular mine in this group; the shares rose on the gold and uranium prospects. Interest in Middle Witwatersrand and Western Holdings also revived.

The confidence of the finance houses in the long term gold outlook is underlined by the scramble for options in the very far east Rand. Unconfirmed reports indicate good values at a depth of 2,800 ft. Under the usual Transvaal conditions this should prove attractive.

West Africans were unchanged. Here again the disappearance of the premium price is more likely to affect low grade rather than high grade producers as the earnings represent a much higher percentage of their profits.

The low price of Australian gold shares may well already discount the loss of premium sales, which it is hoped will not greatly affect the richer properties. In this group, there are indications that the rise in working costs may be slowing down.

Coppers were rather neglected despite satisfactory reports from Rhokana and Rhodesian Anglo. The output of the former property was restricted during the last year by poor coal deliveries. On the long term view, the recent discovery of coal in Northern Rhodesia may alleviate this situation. The profits for the last quarter on Roan Antelope were lower. The return of a free market has necessitated the filling of the "pipe line" and sales may well be normal over an annual period. Selection Trust are exercising their option to mine beryllium in Southern Rhodesia. The American Metal Company are financing the venture and Trepca will probably also be interested. Esperanza touched the record price of 7s. 3d.

Eastern tin shares were all brighter on the higher price of the metal. Encouraging reports from the Geneva Conference also helped this market. Lahat were marked up on the news that an offer of 11s. per share has been made. The directors recommend acceptance.

In the Nigerian section, the good returns from Gold and Base Metal Mines indicate that the original estimate of production from the property was on a very conservative basis. The shares improved despite the fact that the new issue has been overhanging the market. Jantar announced a dividend of 50 per cent on the increased capital. A scrip issue of two for three was made during this year. This compares with 35 per cent on the old capital. The shares remained unchanged but the result can be considered most satisfactory. Beralts improved despite the fact that the Ministry of Materials has again lowered its tungsten price by 15s. a unit. Associated Manganese were unchanged on the announcement that the company is to purchase mining leases and freehold farms which will extend the period by 46 years.

The Mawchi report caused a revival of interest in the shares of this mine at around 5s. 6d. They have been depressed for a long time due to unsettled conditions in Burma. It is now hoped that communications with Rangoon will be opened during the coming dry season.

FINANCE	Price Nov. 25	+ or — on week
African & European	2	—1/16
Anglo American Corpn.	5 1/2	+ 1/2
Anglo-French	17/6	.....
Anglo Transvaal Consol.	19/4 1/2	.....
Central Mining (£1 shrs.)	27/-	+ 3d
Consolidated Goldfields	46/6	+ 1/-
Consol. Mines Selection	25/-	+ 1/3
East Rand Consols	3/1 1/2	+ 3d
General Mining	3 1/16	—1/16
H.E. Prop	36/3	.....
Henderson's Transvaal	7/6	.....
Johnnies	48/9	+ 2/9
Rand Mines	3 1/2	.....
Rand Selection	31/3	+ 7 1/2d
Strathmore Consol.	28/9	.....
Union Corp. (2/6 units)	24/9	.....
Vereeniging Estates	3 1/16	.....
Writs	31/-	+ 4 1/2d
West Wits	41/3	+ 7 1/2d
RAND GOLD		
Blyvoors	37/3	—1/-
Brakpan	9/9	.....
City Deep	15/6	+ 3d
Consol. Main Reef	17/-	—6d
Crown	32/6	.....
Daggas	3 1/2	+ 1/16
Doornfontein	24/9	+ 9d
Durban Deep	34/4 1/2	.....
E. Daggas	13/6	.....
E. Geduld .. (4/- units)	28/9	—7 1/2d
E. Rand Props	2 1/8	—1/16
Geduld	3 1/8	.....
Govt. Areas	11/9	+ 3d
Grootvlei	20/9	—6d
Libanon	9/6	+ 3d
Luipaards Vlei	21/-	+ 3d
Marievale	18/-	+ 6d
Modderfontein East	15/-	.....
New Kleinfontein	16/10 1/2	.....
New Pioneer	17/-	+ 1/6
Randfontein	52/6	+ 7/3
Robinson Deep	10/9	.....
Rose Deep	13/-	—1 1/2d
Simmer & Jack	4/6	.....
S.A. Lands	19/3	+ 6d
Springs	4/-	—3d
Stilfontein	26/3	+ 1/9
Sub Nigel	39/4 1/2	+ 1/3
Van Dyk	5/3	.....
Venterspost	14/9	.....
Vlakfontein	13/-	+ 4 1/2d
Vogelstruisbult	32/-	+ 1/-
West Driefontein	6 5/8	—1/2
W. Rand Consolidated	2 1/2	.....
Western Reefs	2 1/16	+ 1/8

O.F.S.	Price Nov. 25	+ or — on week
Freddies	8/6	—3d
Freddies N.	8/3	—3d
Freddies S.	8/-	.....
F. S. Geduld	2 5/16	+ 1/16
Geoffries	13/3	+ 6d
Harmony	25/6	+ 1/9
Loraine	7/6	+ 10 1/2d
Lydenburg Estates	11/6	.....
Merriespruit	7/6	+ 1 1/2d
Middle Wits	13/-	+ 4 1/2d
Ofsits	35/4 1/2	+ 2/4 1/2
President Brand	28/3	+ 4 1/2d
President Steyn	20/3	+ 7 1/2d
St. Helena	13/4 1/2	—1 1/2d
Virginia Ord.	11/3	+ 6d
Welkom	17/6	+ 1/1 1/2
Western Holdings	3 5/32	+ 1/16
WEST AFRICAN GOLD		
Amalgamated Banket	1/9	+ 1 1/2d
Ariston	5/9	.....
Ashanti	20/1 1/2	.....
Bibiani	5/-	.....
Bremang	2/1 1/2	.....
G.C. Main Reef	3/4 1/2	.....
G.C. Selection Trust	6/4 1/2 XD	—1 1/2d
Konongo	2/1 1/2	.....
Lyndhurst Deep	10 1/2d	.....
Marlu	1/6	.....
Taquah & Abosso	2/6	.....
AUSTRALIAN GOLD		
Boulder Perseverance	2/6	.....
Gold Mines of Kalgoorlie	13/-	.....
Great Boulder Prop.	8/9	—3d
Lake View and Star	14/1 1/2	—1 1/2d
Mount Morgan	17/6	+ 3d
North Kalgurli	6/6	.....
Sons of Gwalia	5/6	.....
South Kalgurli	6/9	.....
Western Mining	10/10 1/2	.....
MISCELLANEOUS GOLD		
Cam and Motor	9/4 1/2	—1 1/2d
Champion Reef	4/6	—1 1/2d
Falcon Mines	7/1 1/2	.....
Globe & Phoenix	21/9	.....
G.F. Rhodesian	4/10 1/2	+ 1 1/2d
London & Rhodesian	4/7 1/2	—4 1/2d
Motapa	1/7 1/2	.....
Mysore	3/9	—3d
Nundydroog	5/7 1/2	—1 1/2d
Ooregum	3/6	—4 1/2d
Oroville	11/6	.....

MISCELLANEOUS GOLD (contd.)	Price Nov. 25	+ or — on week
St. John d'El Rey	23/3	+ 6d
Zams	30/9	.....
DIAMONDS & PLATINUM		
Anglo American Inv.	4 1/16	+ 1/16
Casts	21/- XD	+ 3d
Cons. Diam. of S.W.A.	4 1/2	.....
De Beers Defd. Bearer	66/-	+ 6d
De Beers Pfd. Bearer	16 1/2	—1/2
Pots Platinum	7/9	—3d
Watervaal	13/-	—6d
COPPER		
Chartered	52/4 1/2	—1/-
Esperanza	7/3	+ 3d
Indian Copper	3/10 1/2	.....
Messina	3 1/2	—1/16
Nchanga	6 5/16	.....
Rhod. Anglo-American	48/9	+ 6d
Rhod. Katanga	14/9	—1 1/4d
Rhodesian Selection	14/1 1/2	—6d
Rhokana	18 1/2	+ 1/2
Rio Tinto	20 1/2	+ 1/2
Roan Antelope	13/10 1/2	—3d
Selection Trust	32/6	+ 7 1/2d
Tanks	58/3	.....
Tharsis Sulphur Br.	42/6	.....
TIN (Eastern)		
Ayer Hitam	23/-	+ 6d
Bangrin	8/-	.....
Gopeng	7/10 1/2 XD	+ 4 1/2d
Hongkong	5/7 1/2	+ 1 1/2d
Ipoh	14/4 1/2	+ 7 1/2d
Kamunting	8/4 1/2	+ 6d
Kepong Dredging	4/-	+ 1 1/2d
Kinta Tin Mines	10/3	+ 3d
Malayan Dredging	26/-	+ 6d
Pahang	12/3 XD	.....
Pengkalen	8/-	.....
Petaling	8/3	+ 9d
Rambutan	10/6	.....
Siamese Tin	8/-	+ 6d
Southern Kinta	13/-	+ 6d
S. Malayan	24/3	+ 6d
S. Tronoh	7/3	—3d
Sungei Kinta	10/-	.....
Tekka Taiping	4/4 1/2	+ 4 1/2d
Tronoh	21/3	+ 3d
TIN (Nigerian and Miscellaneous)		
Amalgamated Tin	11/4 1/2 XD	—4 1/2d
Beralt Tin	20/-	+ 1/9
Bisichi	4/4 1/2	+ 3d
British Tin Inv.	12/10 1/2	+ 9d
Ex-Lands Nigeria	3/6	.....

TIN (Nigerian and Miscellaneous) contd.	Price Nov. 25	+ or — on week
Geevor Tin	9/7 1/2	—1 1/4d
Gold & Base Metal	2/10 1/2	+ 1 1/2d
Jantar Nigeria	8/9	.....
Jos Tin Area	11/9	+ 9d
Kaduna Prospectors	2/6	+ 3d
Kaduna Syndicate	2/6	+ 3d
London Tin	5/4 1/2	+ 3d
United Tin	3/3	+ 1 1/2d
SILVER, LEAD, ZINC		
Broken Hill South	42/6	.....
Burma Mines	1/3	.....
Consol. Zinc	25/3	.....
Lake George	6/9	—3d
Mount Isa	31/6 XD	+ 3d
New Broken Hill	22/6	—3d
North Broken Hill	2 1/8	—1/16
Rhodesian Broken Hill	10/10 1/2	+ 1 1/2d
San Francisco Mines	17/6	.....
Uruwira	2/6	.....
MISCELLANEOUS BASE METALS & COAL		
Amal. Collieries of S.A.	42/6	—6d
Associated Manganese	54/4 1/2	—1 1/2d
Cape Asbestos	22/-	—7 1/2d
C.P. Manganese	52/6	.....
Consol. Murchison	20/7 1/2	+ 2/6
Mashaba	3d	.....
Natal Navigation	57/6	+ 1/3
Rhod. Monteleo	1/3	.....
Turner & Newall	65/6	+ 9d
Wankie	12/6	+ 3d
Witbank Colliery	75/-	+ 3/1 1/2
CANADIAN MINES		
Dome	$27 1/2	—2
Hollinger	$23 1/2	—1/4
Hudson Bay Mining	$73	—2
International Nickel	$68	—1 1/2
Mining Corpn. of Canada	£4 1/4	+ 1/16
Noranda	$120 1/2	—2 1/2
Quemont	£5 1/8	—1/4
Yukon	3/9	—1 1/2d
OIL		
Anglo-Iranian	8 1/16	—5/32
Apex	45/-	—1/3
Attock	34/4 1/2	—7 1/2d
Burmah	55/7 1/2	—1/3
Canadian Eagle	28/3	—3d
Mexican Eagle	22/4 1/2	—1 1/2d
Shell (bearer)	4 5/8	—1/32
Trinidad Leasehold	34/- XD	.....
T.P.D.	23/-	—9d
Ultramar	29/-	—1 3

COMPANY NEWS AND VIEWS

Copper Belt Activities

The financial year's results and dividend distribution of the Selection Trust group of copper companies—Roan Antelope and Mufulira Copper Mines, together with Rhodesian Selection Trust which controls Mufulira—have been known for some time as have the results of the Anglo American Corporation of South Africa's giant copper belt producer, Rhokana Corporation. Yet the issuance of the full reports and accounts of these companies have come to mark a notable annual event.

For in these annual statements, the chairmen of the Anglo American Corporation of South Africa and of Selection Trust take the opportunity of bringing shareholders up to date on recent activities on the copper belt. More than that, of course, for the commanding position which the copper belt companies occupy in economic and political life of the Rhodesias, more particularly Northern Rhodesia, gives added weight to the pronouncements of their chairmen, whether they touch on the copper price, power projects, or the labour question.

This year their statements were awaited with more than usual interest for there were many who wanted to hear "straight from the horse's mouth" how the companies were faring under conditions which had shown such marked political and economic changes since a year ago.

In fact, shareholders for the first time in many a year were well aware of what they wanted the chairmen to talk about. The cessation of bulk purchases of copper by the U.K. Ministry of Materials reflected in the recommencement of free dealings in copper on the London Metal Exchange, and the relatively large drop in the copper price which followed was, perhaps, the most general point on which shareholders needed clarification.

Sir Ernest Oppenheimer, chairman of Rhokana Corporation, assured shareholders that the change over to free dealings in copper had caused no more than a temporary dislocation of arrangements and announced that contracts had been arranged with consumers covering the bulk of the corporation's estimated output during the current year, as well as for a substantial portion of its anticipated output in future years. At the same time he noted that the price of copper on the London Metal Exchange had remained at satisfactory levels.

With regard to fuel supplies, Sir Ernest reminded shareholders that the direction of Wankie Colliery, on which the Northern Rhodesia copper companies are dependent for their coal, had been taken over by the Anglo American Corporation of South Africa and he said that it was confidently expected that the output of the colliery would be "substantially increased in the near future." Power supplies also came within his survey and he was able to say that with the successful conclusion of negotiations with the Union Minière for electric power, together with the Rhodesian Government's decision to go ahead with the establishment of the Kafue hydro-electric scheme, the prospects of an adequate power supply for the copper belt was at least assured.

Referring to Bancroft Mines, the newly formed operating company which has taken over the former Rhokana leases, Sir Ernest said it was a matter of considerable satisfaction that Rhokana was able to maintain its dividend distribution at the same rate as in the preceding year as well as subscribe for as much as 9,500,000 shares of the 20,000,000 Bancroft shares so far issued. Moreover, he expected that this new mine would reach the production stage in 1957, rather than 1958, provided there were no unforeseen delays in the delivery of plant and machinery.

Mr. R. L. Prain, Chairman of the Selection Trust Group of Companies, was no less reassuring about the effects of commencement of free dealings in copper on the London Metal Exchange. From their point of view the essential arrangements to be made concerned the changing of their basis of selling from f.o.b. Beira to c.i.f. Europe/U.S.A. This involved the re-establishment of "pipelines" to consumers in the United Kingdom and the United States with the result that actual deliveries to consumers before August, September, and October were considerably lower than the production for those months. However, this lower volume of delivery should be made good later in the year and sales for the full 12 months are expected to be normal.

Mr. Prain also made two interesting disclosures in his annual statement to the shareholders of Roan Antelope and Mufulira. Roan Antelope, he said, is currently considering going over to electrolytic refining in the not too distant future. Should, therefore, the construction of an electrolytic refinery be decided upon it would have to be treated as a capital expenditure item as no provision for this project had been made in the Five Year Replacements Plan. At present the company disposes of the whole of its output as high-grade blister copper.

To those concerned with the progress of Mufulira, he revealed that it had been decided not to proceed with the Baluba venture at this time. Reluctant as were the directors to come to this decision, it was necessary in view of the fact that Baluba's physical characteristics, as known at present, were such that the production rate would be limited to about 100,000 tons of ore per month, yielding a copper output of only 24,000 tons per annum. This production was not big enough, he said, to safely carry a capitalization of the order of £13,000,000 if the bulk of that capital was raised by means of loan capital.

The situation is indeed unfortunate as there is little doubt that Baluba is potentially a great mine, its ore reserves on a new estimation being about 70,000,000 tons 2.68 per cent copper having a cobalt content of 0.18 per cent, which makes it one of the greatest undeveloped sources of cobalt in the world.

Beyond pointing out that the heavy appropriations to replacements and general reserves in the accounts for the year ended June 30 last would enable the future appropriations to be reduced to a more modest rate, Mr. Prain made no attempt to forecast what the financial results of Roan and Mufulira were likely to be for the current year. On the other hand, taxes will be payable at the Rhodesian rates and though the average copper price during the current year will, in all probability, be lower, practically the whole of the companies' estimated production for the current year has already been placed. Prices have yet to be determined as deliveries are made, and because of the temporary dislocation in selling arrangements, caused by the cessation of bulk purchases, most of the sales will be concentrated into the last three quarters of the financial year.

The effect on the companies' earning position during the first quarter of the current year, due to the necessity of having to re-establish "pipelines" to consumers in the U.K. and U.S., was reflected in the companies' September quarterly results summarized in the table below.

	Dec. Qtr. 1952	*Mar. Qtr. 1953*	*June Qtr. 1953*	*Sept. Qtr. 1953*
Mufulira	(*l.tons*)	(*l.tons*)	(*l.tons*)	(*l.tons*)
Sales	14,201	16,156	20,663	10,272
	(£000)	(£000)	(£000)	(£000)
Revenue	3,388	4,152	5,339	2,527
Costs	1,995	1,836	2,535	2,000
Difference in value of copper stocks	Cr. 502	Cr. 30	Cr. 174	Cr. 752
Surplus	1,895	2,346	2,978	1,279
London Expenses	Cr. 9	Cr. 20	3	Nil
Replacements*	250	250	250	205
Profit before taxation†	1,654	2,116	2,725	1,074
Roan Antelope	(*l.tons*)	(*l.tons*)	(*l.tons*)	(*l.tons*)
Sales	15,499	23,012	26,458	12,971
	(£000)	(£000)	(£000)	(£000)
Revenue	3,699	5,853	6,754	3,152
Costs	1,890	2,569	2,989	2,638
Difference in value of copper stocks	Cr. 164	Cr. 17	Cr. 43	Cr. 1,054
Surplus	1,973	3,301	3,808	1,568
London Expenses	Cr.1	Nil	Cr. 16	Nil
Replacements*	250	250	250	183
Profit before taxation†	1,724	3,063	3,574	1,385

The actual production attained by Mufulira during the past quarter amounted to 17,520 l.tons of primary metal while output at Roan for the quarter totalled 21,483 l.tons of blister copper.

* Subject to revision when year's accounts considered. † Estimated.

"Johnnies" Chairman Discusses Randfontein

Mr. H. J. Joel, chairman of Johannesburg Consolidated Investment Company at the annual meeting held in Johannesburg on November 24, said that the exploitation of the Bird Reefs at the Randfontein mine and at East Champ d'Or will bring into account extensive tonnages of ore which had previously been unpayable and this would have a marked effect on the profitability and expected life of Randfontein. The same, he stated, could be said in a lesser degree of East Champ d'Or, whose uranium-bearing slimes are being treated at Randfontein.

Further good progress has been made with the erection of the uranium and sulphuric acid plants at Randfontein and it is expected that both these plants will be in operation during the first half of next year.

Referring to the two Freddies mines in the Orange Free State, Mr. Joel said that it had already been stated that the rate of production was expected to increase during the current year and it could therefore be assumed that the experimental stoping methods now being applied were proving successful. Such success, he added, was fundamental to the profitable operation of these mines as the physical difficulties of water and unstable strata have hindered the process of bringing the two mines into profitable production. But these obstacles, the chairman declared, were being overcome.

Concerning the level of "Johnnies" future net profits, Mr. Joel said that although profits for the current year may not be at the same high level of those for the year just ended, he was of the opinion that, under normal conditions, the present rate of dividend could be maintained on the capital as increased by the 1,316,666 new £1 shares now on offer.

"Casts" Earn More But Pay Less

A preliminary profit statement issued by Consolidated African Selection Trust covering the financial results for the year ended June 30 last, showed that the group profit for the year expanded by £271,075 to £2,463,872. Taxation was less, £1,412,000 against £1,453,125, which gave a surplus for the year of £1,051,872 compared with £739,672. However, appropriations were much heavier, £550,542 against £152,267 to reserves and assets replacements, leaving an available surplus for the year of £501,330 against £587,405 in the preceding year.

"Casts" are recommending a final dividend of 3s. per 5s. unit making, with the interim of 9d. per unit paid in June last, a total for the year of 3s. 9d. compared with 4s. per unit on the £1,516,555 issued capital, or 75 per cent against 80 per cent in the preceding year. This required a net £625,579 (£636,953) and the carry forward at the financial year end was £303,235 compared with £158,484 previously.

The report and accounts will be posted on November 26. The dividend will be paid on December 30 to those registered at November 24. Meeting, December 21.

Mount Lyell Pays Less

Mount Lyell Mining and Railway Company in a preliminary profit statement have announced the payment of a dividend of 6¼ per cent compared with 7½ per cent in the preceding year. The dividend is payable to those registered on November 20 and will be paid on December 21.

Year to Sept. 30	*Working Profit*	*Prospecting**	*Depreciation*	*Taxation*	*Net Profit*	*Dividend*
	£	£	£	£	£	%
1953	380,804	32,361	71,880	76,250	200,313	6¼
1952	417,737	2,316	66,794	110,125	238,502	7½

*Written off prospecting and development.

As can be seen from the above table, which summarizes the salients given in the preliminary statement, the reduced taxation liabilities cushioned the fall in profits but were offset by the larger provisions made for depreciation and for prospecting and development.

New Union Goldfields Make Steady Progress

Although the profit and loss account of New Union Goldfields for the year ended June 30 last showed nothing spectacular, revenue was solidly based and was not inflated by any "windfalls" or "once only" benefits and the picture presented by the accounts was sufficiently encouraging to comment that the company has been making good progress since the lifting of the judicial management order.

The weak spot, as the chairman, Lt. Col. R. L. Broad, stated in his address to shareholders, is in dividend income which, he added, was almost certain to continue weak until such time as some of the major Orange Free State investments reached the dividend paying stage. On the other hand, Col. Broad had cheering news to impart to shareholders and he told them that the rather formidable list of claims outstanding against the company in June, 1951, had now been reduced to three items against which the company had built up a contingencies reserve of £290,000.

The company's liquid position while not good is, in the circumstances, satisfactory and current assets at the end of June last totalled £182,040 which represented an excess over current liabilities by £105,344, of which excess £89,869 was represented by cash holdings.

The company's net profit for the year, after providing for all charges, including taxation, was £55,996 compared with £57,234 and after allocating £10,000 to redemption reserve and appropriating £50,000 to create an exploration reserve the balance carried forward was £54,890 compared with £30,809.

Several of the companies under the aegis of New Union have published their reports and accounts and will be dealt with in these columns next week. Meeting, Johannesburg, December 11.

Jantar Pays More on Larger Capital

Jantar Nigeria, the important Nigerian tin and columbite producer, has recommended the payment of 1s. 3d. per 2s. 6d. stock unit, less tax, on the £225,000 issued capital as increased by the 66⅔ per cent script issue for the year ended September 30 last. This distribution compares with the 35 per cent in the preceding year on an issued capital of £135,000.

Year to Sept 30	*Production Tin C'bite*		*Working Profit*	*Taxation*	*Net Profit*	*Dividend*	*To Reserve*
	(Tons)		£	£	£	£	£
1953	212	210	225,555	155,745	69,810	61,875	25,000
1952	256	214	187,161	120,947	66,214	24,806	40,000

With the high average price which columbite is currently commanding it comes as no surprise that Jantar Nigeria, one of the world's leading producers of the metal, would announce satisfactory results for the year ended September 30 last. Even the swingeing burden of taxation did not prevent shareholders from receiving the benefits of the company's improved results. Indeed, it may well be that the results now announced do not, in fact, tell the full story as Jantar may not have yet received all the money due to it from the U.S.A. for the sale of the whole of its production last year. Be that as it may, the preliminary statement seems to reflect a good deal of confidence as the full allocation to reserves could not be met out of the year's profit.

The report and accounts will be posted to stockholders on November 27. Dividend warrants will be posted on December 22. Meeting, London, December 22.

Chenderiang Experiences Another Difficult Year

The difficulties which dogged the fortunes of Chenderiang Tin Dredging during 1951/52 continued to hamper the company's progress to March 31 last. Terrorist activity was rife in the district; the paddock in the Sungei Lah section was inundated by a landslide; continued blasting was necessary in the Kriss section to maintain levels between the working face and gravel pumps; and finally, hydraulic mining operations in the Jabus section were impeded by large quantities of stone and boulders. In these circumstances the company did well to return the results they did.

Year to Mar. 31	*Per cubic yard*			*Output*	*Per ton ore*	
	Treated	*Yield*	*Cost*		*Cost*	*Price**
	(000)	*(lb.)*	*s. d.*	*(tons)*	£	£
1953	412	0.73	3 7	135	548	543
1952	436	0.83	3 4	162	449	563
1951	507	0.83	2 4	196	305	540

*Less tribute.

Nevertheless, these adverse features made themselves felt in the profit and loss account, the salients of which are set out in the table below and call for little comment, except perhaps to remark that the available surplus of £7,547 would, in normal circumstances, have justified the payment of a moderate dividend. But, as the chairman in his statement points out, the directors deemed it essential to conserve resources in view of the low tin price prevailing since the company's financial year end and the fact that the company has incurred an estimated working loss of £8,500 during the first six months of the current year during which time production of tin ore amounted to only 50 tons compared with 81 tons in the corresponding period of the year under review.

Year to Mar. 31	*Gross Revenue*	*Expenses*	*Taxation*	*Net Profit*	*Dividend*	*Carry Forward*
	£	£	£	£	%	£
1953	101,268	79,707	14,014	7,547	nil	16,076
1952	113,184	77,998	22,152	13,034	10	14,529
1951	131,013	65,403	25,604	40,006	20	13,346

During the current year the company's claim for war damage was assessed at £40,222, of which £36,361 has been received.

Mr. Jack Addinsell is chairman. Meeting, London, December 10.

Consolidated Tin Mines of Burma Pay More

The preliminary profit statement issued by Consolidated Tin Mines of Burma showing the financial results achieved during the year ended March 31 last, revealed that the company had more than doubled its profits and that although it was called upon to meet much heavier tax liabilities it was able to raise

the dividend payment to 7½ per cent per 5s. share on the £318,089 issued capital.

Year to March 31	Group Profit	Tax-ation	Net Profit	Dividend Distribution %	Dividend Distribution £	Carry Forward
1953	33,300*	15,175	18,125†	7½	13,121	26,289
1952	13,181	1,377	11,804	5	8,350	21,987

* Including royalty rebate of £2,488 over provided in previous years.
† Excluding £672 written off rehabilitation expenditure and £30 (1952 - £44), attributable to outside interests.

The report and accounts will be posted to shareholders on November 26. Mr. W. J. C. Richards is chairman. Meeting, London, December 18.

Australia and New Zealand Bank Higher Net Profits

Australia and New Zealand Bank in a preliminary profit statement have announced net profits for the year ended September 30 last of £A749,865 against £A701,608, after providing for all taxation on profits earned to date and making transfers to reserve and provisions for contingencies out of which accounts provision has been made for any diminution in value of assets. However, the final dividend recommended of 6 per cent, making 10 per cent for the year, remains unchanged. The total distribution absorbed £A586,713 (£A560,043), the sum of £A313,750 (Nil) was allocated to reserves, leaving £A1,112,089 to be carried forward against £A1,262,687 brought in.

The preliminary statement also publishes details of an offer of capital and the bank proposes to increase its authorized capital from £17,000,000 (English currency) to £22,500,000 (English currency) by the creation of 5,500,000 "B" shares of £1 each which will not carry reserve liability.

It is proposed to offer 1,700,000 of the "B" shares for subscription, on or before February 1 next, in cash at 26s. per share (English currency) to shareholders registered on December 1, in the ratio of one new "B" share for every five shares of £2 each (£1 paid) held. Additionally, shareholders may subscribe for any shares not taken up by other shareholders at the same price. The "B" shares to be issued will rank for the full amount of dividend declared in respect of the current year.

An extraordinary general meeting will be held on January 1 next to pass the necessary resolutions.

Company Shorts

Selection Trust Exercises Option on Lithium-Beryllium Property.—Selection Trust has announced that owing to the encouraging results achieved on a lithium-beryllium property in Southern Rhodesia, it has decided to exercise its option over the company.

The property, which was being investigated by Bikita Minerals (Private) Ltd., a subsidiary of Selection Trust, is situated approximately 45 miles from Fort Victoria. The lithium bearing mineral deposit is large, high-grade, and there is also a considerable tonnage of beryl ore. The American Metal Company is participating in the financing of the venture and American Potash and Chemical Corporation, which is contributing towards the development expenditure, has the right to participate in the full financing of the business. Trepca Mines, by virtue of its working agreement with Selection Trust, is also interested.

Lithium is principally used in the glass and ceramic industries but has many other industrial applications, while beryllium is used mainly in special purpose alloys.

Coronation Syndicate Pays 5 per cent More.—Coronation Syndicate, the South African Incorporated Company which operates the Muriel, Arcturus and Tebekwe mines, in Southern Rhodesia, has published a preliminary statement covering its financial results for the year ended June 30 last. Group profit for the year, after all charges, including tax liabilities of £26,737 (£12,135), expanded from £54,796 to £88,428. Shareholders participated in the better results and received total dividend payments of 15 per cent (10 per cent) which absorbed a net amount of £60,375 compared with £40,250 in the preceding year.

Meeting, Johannesburg, December 29.

S.A. Townships Cut Dividend to 3d. per Share.—South African Townships, Mining and Finance Corporation have declared dividend No. 46 of 3d. per share for the year ended September 30 last against 6d. per share in the previous year. This halving of the dividend reflects the contraction in profits, after tax, by £56,247 to £68,050.

The dividend is payable to shareholders registered on November 27 and to holders of coupon No. 48. Warrants will be posted on or about January 4 next.

Gold Dredge Plans for Sale

A complete set of plans and specifications comprising 190 drawings for a deep-digging electrically driven 18 cu. ft. spud-type Bucket Dredge designed to dig to a depth of 120 ft. below pond level and to carry a bank of 15 ft.

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JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED

(Incorporated in the Union of South Africa)

EXTRACT FROM THE SPEECH OF THE CHAIRMAN, MR. H. J. JOEL, AT THE ANNUAL GENERAL MEETING HELD IN JOHANNESBURG ON NOVEMBER 24, 1953

The Balance Sheet shows for the first time the market value of quoted investments based on Stock Exchange values or Directors' valuations and you will see that the total valuation, £12,865,851, shows a substantial appreciation as compared with the value adopted for Balance Sheet purposes, £8,687,229. Both valuations include an amount of £1,969,224 for holdings of Shares and Loan Stock in Freddies North Lease Area Limited and Freddies South Lease Area Limited, this valuation being lower than cost.

The loans to these two Companies at June 30, 1953, amounted to £4,100,000, as stated in the Directors' Report, and are included under Loans to Mining and Other Associated Companies. This figure now stands at £5,150,000. You will note the statement in the Report that these loans must be regarded as long-term investments, the value of which, as in the case of the shareholdings in these two Companies, is dependent upon the future progress of the mines. It does seem to us at this stage that they will justify the hopes which have led us to invest such a large proportion of the Company's funds in them.

Still further finance will ultimately be required to bring the mines to full production. Meanwhile it is necessary, as quickly as possible, to increase their scale of operations to one which, while not utilizing the full capacity of the plants, should earn sufficient revenue to eliminate the working losses now being incurred. Capital is required immediately to finance these initial losses and to provide for additional development of working faces underground and the completion of sundry items of a capital nature. With this in view, the two Freddies Companies have recently arranged with the National Finance Corporation of South Africa for loan facilities amounting to £500,000 per Company, which facilities will in all probability be fully drawn by the middle of next year. The financing of these two mines to their present stage has depleted your Company's liquid position to a point which calls for further cash resources. Your Directors have decided, therefore, that to provide for these requirements it is necessary to augment the Company's liquid resources by a sum of approximately £2,550,000 and that the most practical method of achieving this object is by increasing the issued capital. A preliminary announcement of a proposed issue of new shares to existing shareholders, in the proportion of one new share for three existing shares at a price of 40s. per share, has already appeared in the Press.

The profit for the year, after charging a full year's interest on the 4½ per cent Loan Stock, was £2,088,239 compared with £1,444,237 last year. After charging taxation and adding £348,352 brought forward from 1952, the amount available for dividend and other appropriations was £1,541,683. A sum of £250,000 was transferred to Investment Reserve, which now stands at £1,446,514. In addition, there have been appropriations to General Reserve of £500,000 and to Provision for Staff Pension Funds and Voluntary Allowances of £100,000. Dividend No. 61 of 3s. 6d. per share (17½ per cent), less United Kingdom Income Tax at 9s. in the £, absorbed £380,187 and, after the appropriations referred to above, the balance of profit carried forward amounted to £311,496, reflecting a decrease of £36,856.

Although profits may not be maintained at the high level of those for the year to June 30, 1953, I am of the opinion that provided there is no major change in the general conditions affecting the Company's varied interests, the present rate of dividend can be maintained on the proposed increased capital. This will require a net amount of £506,916 subject to any alteration in the United Kingdom Income Tax rate.

GOLD MINING INDUSTRY

At the present time two important developments are taking place in the gold mining industry in the Union of South Africa. I refer, firstly, to the fact that in the new goldfields in the Far West Rand, Klerksdorp and the Orange Free State, the preparatory work of many years is now beginning to show cumulative results, and, secondly, to the fact that the production of uranium by the gold mines of the industry has already commenced.

In the Orange Free State, published reports from the developing mines have disclosed values which, in general, have exceeded those which might have been expected from the results previously obtained in boreholes. On the ten mines which have published reports of development sampling, the total footage sampled on the Basal Reef to September 30, 1953, amounted to some 200,000 feet. Of this approximately 120,000 feet, or 60 per cent, was payable and gave an average value of 17.3 pennyweights over 24.2 inches equivalent to 419 inch-pennyweights, a result which can be considered as extremely satisfactory.

Five companies are already in production, and five others have stated in their published reports that they expect to have commenced production by the end of 1954. To October 31, 1953, the operating mines in the Free State had produced 570,591 ounces of gold to the value of £7,205,000. A steady increase in the extent of this valuable contribution to the new wealth of the Union of South Africa can be expected from this stage onwards.

In so far as the production of uranium is concerned, up to the present fifteen mines in the Transvaal and seven mines in the Orange Free State have announced their acceptance as potential uranium producers. Of these, three have announced the profits which have arisen from the current production of uranium, while a fourth has announced that the initial stages of production have been reached.

For security reasons, no data concerning the volume of production from the potential uranium producers of the Union of South Africa have been made available. There is no doubt, however, that this country will occupy an important position in the ranks of uranium producers, and that the revenue derived from the sale of uranium oxide will provide a very valuable addition to this country's income.

On the adverse side of the gold mining account for the year is the fact that costs are still tending to rise, although the rate of increase has been somewhat slower than for the previous year. The second adverse item is the fact that the industry is still short of Native labour, and that, as a result, the milling rate of most mines is below full capacity.

THE GOLD MINING COMPANIES OF THE GROUP

Good progress has been made with the erection of the uranium and sulphuric acid plants at the property of The Randfontein Estates Gold Mining Company, Witwatersrand Limited, and it is expected that both these plants will be in operation during the first half of 1954. A Notice appeared in the Press on November 21 stating that an expansion of the uranium project is to be undertaken forthwith and this mine occupies an important position amongst the South African producers of uranium. Arrangements have been made whereby uranium-bearing slimes from the property of The East Champ d'Or Gold Mining Company Limited are to be pumped to the plant at Randfontein Estates for treatment, which operation will commence with the commissioning of the first portion of the Randfontein Estates plant. The exploitation of the Bird Reefs on Randfontein Estates and East Champ d'Or will bring into account extensive tonnages of ore, which have previously been unpayable, and this will have a marked effect upon the profitability and expected life of Randfontein Estates. The same can be said in a lesser degree of East Champ d'Or.

Owing to the exhaustion of the available payment ore, mining operations at Witwatersrand Gold Mining Company Limited are to be discontinued.

With regard to operations at the mines of Freddies North Lease Area Limited and Freddies South Lease Area Limited, although the quantity of development accomplished on both mines was inadequate to provide sufficient stope faces to enable a full programme of stoping and milling operations to be undertaking, it was decided that production on a small scale should commence during July, 1953, partly in order to provide some revenue to assist in meeting expenditure, but particularly to test out more fully the experimental stoping methods to which reference was made at the annual meeting of these two companies held on May 28, 1953. In the Reports of these companies for the quarter ended September 30, 1953, it is stated that the rate of production is expected to increase during this current quarter, and it can therefore be assumed that the stoping methods which are being applied have proved successful. Such success is, of course, fundamental to the profitable operation of these mines.

During the quarter ended September 30, 1953, when operations on a limited scale were being carried out, 74,000 tons were crushed at Freddies North Lease Area Limited, yielding 11,424 oz. of gold, and 84,000 tons were crushed at Freddies South Lease Area Limited, yielding 14,414 oz.

The published results for Freddies South indicates that the values and percentage payability during the past six months have been somewhat below the average figures given above, but it is hoped that this position will again improve.

Diamonds. Although diamond sales so far this year have not been maintained at the record levels of last year, the sales for the nine months ended September 30, 1953, at £45,587,000, are not unsatisfactory in comparison with the figure of £53,702,000 for the equivalent period of 1952.

BLYVOORUITZICHT GOLD MINING COMPANY, LTD.

At the Sixteenth Annual Meeting of shareholders held in Johannesburg on November 17, 1953, **Mr. W. M. Frames,** the Chairman, in the course of his remarks said:—

Compared with the previous year's results, the working profit of £6,362,500 from gold mining showed the substantial decrease of nearly £1,333,000, which was due to the reduced tonnage milled, the lower yield, the drop in the premium on sales of gold at enhanced prices and increased working costs. The lower yield conformed with the reduction in value of the ore reserves over the past few years, while the movements in the tonnage milled and unit working costs were due principally to the severe decrease in the average number of non-European underground employees. Good values were disclosed during the year in reef driving on the 8th level at A1 and A2 sub-incline shafts and in the reef winzes at A3 sub-incline shaft. A large proportion of the development west of No. 2 Shaft was accomplished by raises and the values were very much in accordance with those exposed in the adjacent drives. The drives being advanced into the western area of the property progressed relatively slowly because of the intersection of water-bearing fissures.

Sinking of the sub-incline shafts was retarded by water control problems and as these may cause further delays additional reef winzes have been started from the present bottom levels of the mine so as to expedite lateral development. Work on the twin haulages south from Nos. 1 and 2 Shafts to the positions of the sub-vertical shafts was continued. It is planned to commence sinking No. 1 sub-vertical shaft first, and for that reason work was concentrated mainly on the haulage south from No. 1 Shaft.

The uranium plant commenced operations in April but, due to initial plant difficulties and consequent adjustments, output was seriously restricted and the estimated profit for the period amounted to £21,710. I am pleased to report that by the end of this year the plant is expected to be in the position to operate at full capacity.

On several occasions over the past seven years the attention of shareholders has been directed to the fact that the considerable sums expended on capital account have resulted in lower mineral lease consideration and taxation payments, but that the time would arrive when the expenditure would, to a great extent, be redeemed and the liabilities to these payments would then be much heavier. It may not be generally realized that, with the present rate of 27½ per cent per annum allowed for the redemption of capital expenditure, 72.4 per cent of such expenditure is redeemed within four years. The heavy capital expenditure on uranium during the past three financial years has resulted in the total lease consideration and tax liabilities of the company being less by about £900,000.

It is anticipated that the rate of capital expenditure on the gold mining section of the company's operations will decrease during the next five years and as the uranium plant is practically completed the annual redemption allowance will in future be substantially less with consequent increases in the mineral lease and taxation payments.

As you will have seen from the Directors' Report, a new agreement has been entered into, which supersedes the agreements entered into in 1945 and 1948 between this company and certain other parties, recording the conditions upon which it has been decided to investigate further the possibility of establishing a single ultra-deep mining unit on an area of approximately 4,820 morgen of ground lying to the south of the property of this company and that of West Driefontein Gold Mining Company Ltd. In the event of it being agreed to exploit the area and to form a new company for that purpose, this company would be refunded any drilling expenses and would be entitled to a 25 per cent participation in the vendor consideration, which would be applied in subscribing for shares in the new company. This company would also be entitled to a 30 per cent subscription right at par in that company's initial working capital.

In reply to a shareholder who commented on the results so far obtained from the production of uranium when compared with certain other uranium producers, and to his enquiry whether the Board of Directors was satisfied with the grade obtained and with the extraction of uranium on the company's property, the Chairman stated that he was prevented from answering certain aspects of the question owing to the provisions for secrecy imposed by the Atomic Energy Act. He could, however, state that the difficulties which had been experienced in the initial stages of running the plant were, as in the case of all new plant, due to teething troubles and that in the circumstances the Board was satisfied with operations.

The Report and Accounts were adopted.

CONSOLIDATED MAIN REEF MINES AND ESTATE, LTD.

At the Fifty-fifth Annual Meeting of shareholders held in Johannesburg on November 17, 1953, **Mr. N. W. S. Lewin,** the Chairman, in the course of his remarks said:—

The decrease in the profits earned during the year under review to slightly more than half those of the previous year was due to the drop in revenue caused in the main by the fall in the tonnage milled resulting from the decline in the non-European labour force. The tonnage milled and consequently the profits during the current financial year are below those of the corresponding period of 1952 and reflect further the difficult labour conditions under which the mine is operating.

The fall in tonnage milled in addition to decreasing the revenue, caused a substantial rise in unit working costs which in turn resulted in an increase in the pay limit. This increase in the pay limit tended to reduce the percentage of payability of the reefs being opened up in the various development areas and caused the exclusion of some 585,000 tons of ore, previously classed as payable, from the ore reserves. In previous annual addresses the Chairmen have informed you of the position on each of the five reefs in some detail and have stated that on all but the Main Reef primary development was no longer taking place. Development on the 66th level Main Reef was stopped during the year as values were too scattered and the percentage of payability too low to justify further primary development. Throughout the mine, therefore, development is now confined almost entirely to secondary or internal work but, as is mentioned in the Manager's Report, two drives are being advanced on the Kimberley and Bird reefs into the Crown Mines property with a view to prospecting and tributing sections inaccessible to that mine. Occasionally in the internal development, patches of abnormally rich ore are exposed. It was due to one of these occurrences that the development for the quarter ended September 30 gave such high values.

Shareholders will have noted in the Annual Report the warning that unless conditions change for the better a further falling off in the scale of operations must be expected over the next few years. Every effort is being made to keep unit costs from rising but it will become more and more difficult to do so in the face of shortages of non-European labour and additional expenditure due directly and indirectly to increased railage and power charges. Quite apart from the labour supply the present and prospective ore reserve position at the mine is such that the tonnages developed are likely, as in the past few years, to fall short of the tonnages mined and a gradual decline in the tonnage milled and therefore in revenue will before long be unavoidable. Plans are now being formulated in order to ensure as far as is practicable a proportionate reduction in overall expenditure as the scale of operations declines.

In reply to a written question from a shareholder, the Chairman stated that the position in connection with uranium had been carefully investigated but it appeared to be unlikely that the company would be invited by the Minister of Mines to become a producer of uranium.

The Report and Accounts were adopted.

DIVIDENDS

Aluminium 50 c. (December 5)
Ampat Tin Dredging 15% *i*
Consolidated Gold Fields of South Africa 15% (December 15)
Consolidated Tin Mines of Burma 7½%
Electrolytic Zinc Co. of Australasia Pref. and Ord. 27½% (Dec. 4)
General Mining and Finance 10% (December 5)
Gold Coast Selection Trust 15% *i* (December 11)
Gopeng Consolidated 5% (December 16)
H. E. Proprietary 10% *i* (November 28)
Ipoh Tin 2s. (December 9th)
Imperial Chemical Industries 6% *i* (December 1)
Loloma (Fiji) Gold 6d. *
London and African Mining Trust 6¼% (December 16)
North Broken Hill 50% (December 2)
Perak River Hydro-Electric Power 6% (December 3)
Petaling Tin 10% *i* (November 30)
Placer Development 50 c. *i* (December 15)
Rahman Hydraulic Tin 10%
Rawang Concessions 3s. *i* (December 9)
Southern Kinta Consolidated 12½% *i*
Stream-Line Filters 5% (December 16)
Zinc Investments 2½% (December 11)

i interim * tax free

ROAN ANTELOPE COPPER MINES LIMITED.

The following is an abridgment of the Statement, dated 9th October, 1953, by the Chairman **(Mr. R. L. Prain, O.B.E.)** circulated to the Members:—

The mine and mill broke all records in hoisting and milling 4,845,600 tons of diluted ore which produced 87,307 long tons blister copper, a new company record.

Production costs per long ton blister copper at Beira worked out at £108 11s. 5d., an increase of about 25 per cent. over the previous year. The main causes for the rise were a higher royalty, higher cash bonus (both related to the price of copper), increased African wages and the African strike.

The price received for our product during the year averaged £248 12s. 4d. per long ton at Beira, which is by far the highest price to date. Our profit margin before taxes or reserves was £135 18s. 2d. per ton, and the operating surplus for the year was £12,424,375.

As a result of the transfer of the Company's residence, part of the reserve made in the previous year for United Kingdom income tax becomes liberated and in this way £2,165,000 is taken in as a credit against our remaining tax liability which is substantially for Northern Rhodesia income tax alone. This amounts to £4,565,000 so that after crediting the above-mentioned £2,165,000 the tax debit to the Appropriation Account is £2,400,000.

The sums of £2,750,000 and £3,000,000 was transferred to the General Reserve and Replacements Reserve respectively.

The Directors recommend a dividend of 2s. per share. After making these dispositions the carry-forward will be £53,000.

After referring to the mine position, award of the Arbitrator following the strike of African employees at the end of 1952 and to the power and fuel position on the Copperbelt Mr. Prain continued:—

EMIGRATION

The Company's seat of control was moved to Rhodesia on 1st July and the move was carried out with a minimum of dislocation. We are now established in temporary quarters in Lusaka.

In view of our emigration Selection Trust Limited has been appointed London Registrars and Paying Agents as from 1st July, 1953.

The Anglo Metal Company Limited, of London, continues to act as our Sales Agents.

FEDERATION

This year has seen the birth of the Federation of Rhodesia and Nyasaland. On the broadest political grounds this is a development greatly to be welcomed. Our affairs in future will come partly into the province of the Federal Government and partly into that of the Northern Rhodesia Territorial Government. We hope that we shall be found ready to play our full part in the great political and economic developments that lie ahead of Central Africa.

One of the first-fruits of Federation, with its declared object of partnership, was the move, publicly announced last May, by the copper companies to initiate discussions on the industrial colour bar on the Copperbelt. This problem permits of no easy or quick solution. It is one common to many parts of Africa. Any attempt to solve it is apt to evoke suspicion, alarm, resentment and prejudice. Yet nothing is clearer than that the present situation is untenable both in principle and in practice; nor, unfortunately, is the inevitability of change in this case one which can be contemplated as being likely to take place under conditions of gradualness. To harbour this delusion is to blind oneself deliberately to the lessons of history, and can lead only to the rude awakening which has occurred, often in tragic circumstances, elsewhere in Africa. Once this is recognised I am confident that the action of the companies in attempting to deal with this problem will be seen in its real light, namely, an attempt to do justice to the legitimate aspirations of one section of their employees while at the same time safeguarding the continued industrial and social security of the other section of their employees. The subject is a challenge to the European claim of leadership without domination, and to the liberal principles of British Colonial policy.

On the satisfactory solution of this problem depends, perhaps more than on any other, the continued prosperity of this industry, which in all other respects would appear to be endowed with more than usual advantages and talents. These can be harnessed to the benefit of employees, stockholders, our country of production, and the free world generally, for many years ahead, if wisdom will prevail where at present suspicion reigns; without wisdom, all will suffer.

MUFULIRA COPPER MINES LIMITED.

The following is an abridgment of the Statement, dated 8th October, 1953, by the Chairman **(Mr. R. L. Prain, O.B.E.)** circulated to the Members:—

Production amounted to 76,089 tons of primary copper, of which 50,737 tons were produced in the form of blister copper and 19,212 tons as electrolytic cathodes, the remainder going into operating stocks for the refinery.

As a consequence of the decreased production, costs increased over the previous year from £86 1s. 1d. per ton blister at Beira to an average of £109 8s. 3d. per ton of blister or cathode. Apart from the decreased output, other causes for the rise include the higher royalty based on the higher price received during the year, higher cash bonus and increased African wages.

Sales amounted to 55,486 tons of blister and 17,495 tons of cathodes, the prices received for these products being £245 6s. 1d. and £261 12s. 7d. per ton respectively, in each case expressed f.o.b. Beira. Our profit margin before taxes or reserves was £135 5s. 1d. per ton, and the operating surplus for the year was £10,535,916.

As a result of the transfer of the Company's residence, part of the reserve made in the previous year for United Kingdom income tax becomes liberated and in this way £1,997,000 is taken in as a credit against our remaining tax liability which is substantially for Northern Rhodesia income tax alone. This amounts to £3,842,000 so that after crediting the above-mentioned £1,997,000 the tax debit to the Appropriation Account is £1,845,000.

The sum of £3m. has been appropriated to Replacements Reserve and £2,750,000 transferred to General Reserve.

After making these reserves the Directors recommend a dividend of 5s. 3d. per share. Together with the interim dividend which was paid before the Company emigrated, this means a distribution of £2,811,000 to shareholders in respect of the past year; the carry-forward will be £125,000.

CHIBULUMA AND BALUBA

During the year the Chibuluma Company made an announcement regarding the increased cost of equipping the property, the favourable trend of ore sampling and metallurgical testing, and the further arrangements made with the United States Government for the financing of the property. Our investment in Chibuluma is now £1m. We have great confidence in this property and developments to date are all favourable.

I have referred in my last two statements to the possibility that we should begin to develop the Baluba orebody by means of a new company to be called Baluba Mines Limited. I indicated last year that negotiations for the provision of the finance were well advanced and so was the exploration at the property to determine the characteristics of the orebody.

It is with some regret, therefore, that this year I have to announce that your Board had decided not to proceed with the Baluba venture at this time. I will recapitulate briefly the events which led to this decision.

At the time of my last statement the cost of developing Baluba to produce about 100,000 tons of ore per month was estimated at about £9m., and on this basis we had been negotiating with the Export-Import Bank of Washington for credit facilities of $21m., while the equity to be issued by Baluba would be £1.5m. It was then considered necessary to re-examine the estimates and as a result it was found that the cost would be nearer £13m. We therefore asked the Bank whether they would increase the credit to $30m., on condition that the equity would also be increased. We also asked for certain guarantees as to price and market. Unfortunately the Bank were unable to agree and the Board decided that the enterprise was too marginal to proceed with at the present time.

In view of Baluba's considerable ore reserves, and an estimated cobalt content of .18 per cent. which may well make it the greatest undeveloped source of cobalt in the world, it may be asked why the enterprise should be described as marginal. The reason is that the potential ore production of 100,000 tons per month, equivalent to 24,000 tons of copper per year, is not big enough to justify a capitalisation of £13m. if the bulk of the capital consists of loan capital.

Mr. Prain referred to the award of the Arbitrator following the strike of African employees at the end of 1952, and to the power and fuel situation on the Copperbelt. He continued:—

EMIGRATION

The Company's seat of control was moved to Rhodesia on 1st July and we are now established in temporary quarters in Lusaka. In view of our emigration Selection Trust Limited has been appointed London Registrars and Paying Agents as from 1st July, 1953. The Anglo Metal Company Limited, of London, continues to act as our Sales Agents.

RHOKANA CORPORATION, LTD.

EXTREMELY SATISFACTORY RESULTS

SIR ERNEST OPPENHEIMER'S STATEMENT

The thirty-first annual general meeting of Rhokana Corporation, Ltd., will be held on December 16, at Nkana, Northern Rhodesia.

The following is an extract from the statement by the chairman, **Sir Ernest Oppenheimer,** dated October 28, 1953, circulated with the report and accounts for the year ended June 30, 1953.

The past year's results can be considered extremely satisfactory. The operating surplus for the year to June, 1953, was approximately £9,900,000; this is some £500,000 more—on a somewhat smaller sales tonnage—than that earned on a comparable basis in the preceding year, during which abnormal sales resulted in an exceptional profit of £640,000, which was transferred, after taxation, to sales equalization reserve. Investment income is also higher, by about £600,000, as a result of increased dividends received from Rhokana's large shareholding in Nchanga Consolidated Copper Mines, Ltd.

The Nchanga Company's profit, after taxation, for the year to March 31, 1953, showed an increase of approximately £2,500,000 over the comparable figure for the preceding year. Nchanga's scale of operations has shown remarkable expansion in the last few years. The Board of that company has recently decided to embark on large-scale open pit mining as an adjunct to underground mining, with a view to securing a better balance in the grade of ore mined in relation to the company's overall ore reserves.

POTENTIALITIES OF BANCROFT MINES

A major event in the past year has been the formation of Bancroft Mines, Ltd., to acquire the Konkola and Kirila Bomwe properties from your Corporation. The total estimated cost of bringing the new mine to production is about £12,000,000, of which £6,000,000 has been raised initially. Your Corporation has subscribed for 9,500,000 of the 20,000,000 shares which have been issued.

While the subscription by your Corporation of such a high proportion of the Bancroft capital involves the placing to reserve of a large share of profits, the benefits which may be expected to accrue from this investment justify the withholding of funds which might otherwise have been paid out in dividends. It is indeed a matter of considerable satisfaction that your Corporation should have been able to finance such a large stake in Bancroft out of its existing resources whilst simultaneously maintaining its total dividends for the year at the level of those paid for 1951-52. It is now anticipated that it may be possible to bring Bancroft to the production stage during 1957.

Your Corporation has retained its holding in Mufulira Copper Mines, and will benefit from the reduction in taxation on that company's dividends, as a result of the removal of their head office from London to Lusaka.

The London Metal Exchange reopened for free dealing in copper on August 5, 1953, following the cessation of bulk purchase of copper by the United Kingdom Ministry of Materials which has, since 1939, acquired or otherwise allocated the whole of this Corporation's copper production.

The price of copper since the reopening of the London Metal Exchange has remained steady at satisfactory levels.

Contracts have been finalized with consumers for the greater part of the Corporation's anticipated output for the current year and for a substantial part of that output in later years.

RHODESIAN FEDERATION

The Federation of the two Rhodesias and Nyasaland is now an accomplished fact. European leadership has in little more than half a century, brought these Central African territories from savagery to the proud position in which they stand to-day. In the new advance into Federation, political policy must depend very largely on the practical realities of everyday life and none of the practical realities is more important in this connection than the industrial relationships within the copper-mining industry affecting both African and European workers. We, as a Corporation, have played a great part in the past history of Northern Rhodesia and we look forward with complete confidence to the Corporation's future rôle in the new and greater Rhodesia that is now emerging.

Copies of the annual report and accounts may be obtained from the head office, Kitwe, or from the transfer offices at 44 Main Street, Johannesburg, and 11 Old Jewry, London, E.C.2.

THE CEMENTATION COMPANY

The annual general meeting of The Cementation Company, Ltd. will be held in London on December 17.

The following is an extract from the statement of the chairman, **Mr. A. R. Neelands, M.C.,** circulated with the report and accounts.

I first wish to express great sorrow and regret at the loss of Mr. Harry Clayton, the late chairman, and Monsieur Louis Chevrillon, both of whom died in the first week of February. The Board have honoured me by appointing me in Mr. Clayton's place. In succession to me, Mr. W. A. Pickersgill was appointed managing director.

The trading profit of £537,958, after writing off £242,509 for depreciation upon fixed assets, shows continued progress. Our satisfaction at the result is clouded by the large proportion of our earnings at home and abroad which has to be set aside for taxation—£394,808. This charge is unduly increased because of the cessation of initial allowances in the taxation year relating to these accounts; so we are transferring £44,500 from the taxation equilisation reserve created to meet such a contingency. Initial allowances had a beneficial effect on our cash resources by reducing our taxation liabilities and we are pleased that the Government have restored them and have also cancelled the excess profits levy from next December.

In mining work we were fully extended. Those of you who read in the Press the news of the award of a major shaft-sinking contract to a German firm of sinking contractors and the comments thereon may have wondered about it with some uneasiness. I want to assure you that this does not in any way reflect on our competence or on our standing with the National Coal Board. On the latter point I am satisfied that the National Coal Board's action in inviting tenders from abroad was entirely due to their knowledge that British shaft-sinking contractors were fully employed.

We take no umbrage at the invitation to German firms possessing equipment to take sinking contracts here. It is essential that the country should be supplied with an abundance of coal quickly. Naturally, when the present pressure for new shafts is relieved, as in the nature of things it soon will be, to a point where it can be handled by British sinking contractors, we assume that no further contracts will be placed abroad.

In the matter of competence, a question you might ask is why we did not have or buy sufficient plant to handle work available in view of our well justified claim to be the leading firm of shaft sinking contractors in the world.

Well before the war and before nationalisation, we had sufficient plant to handle all the shaft sinking in the country and did indeed handle most of it. Both the war and nationalisation were foreseen and we bought and continued to buy as and when we could, so that when shaft sinking was resumed after the war we had greater resources and equipment than we had when the war began, and we had placed large orders for further equipment with the manufacturers as soon after the war as they would accept them. The cost to the contractor of equipping and financing a major sinking of a pair of shafts before any billing is of the order of £250,000, also the plant has to be paid for largely in advance.

Last year we decided against placing further large orders at high cost with delayed delivery, having in mind the amount of plant on order, and that plant would shortly start coming back from contracts in hand, and further having in mind that by the time any plant ordered now was delivered, the rush of shaft sinking would probably have abated, and it was unlikely that the extra profit, if any, earned over a comparative short period would pay for such plant likely to become redundant thereafter. We believe a correct balance was maintained in our orderings between enterprise and caution.

Of our subsidiaries, I would make particular mention of John Thom, Ltd., who, by determination helped by inventiveness and excellent supervision, have attained a drilling technique which has led to increased turnover and greatly improved core recoveries.

Our long-established and strong company in Africa has maintained its turnover in spite of the reduction in drilling work in the Orange Free State. The turnover of Cementation Canada did not come up to expectations due to unexpected delays but this has in no way weakened its prospects for 1953-54; indeed, these are excellent. Cementation Company (Ireland), Ltd., with a small turnover made a normal profit.

With regard to our associated companies, Colcrete, Ltd., have made excellent progress and the process is now well known and definitely established. Our French associates failed to obtain the full benefit from their increased capital owing to some recession of activities but their normal turnover and profits have been well maintained.

We have pleasure in proposing a dividend at the rate of 17½ per cent. in respect of the Ordinary stock.

INDIAN COPPER CORPORATION

ORE RESERVES REACH RECORD FIGURE

SIR ANTHONY ELKINS ON LABOUR CONDITIONS

The Twenty-ninth Annual General Meeting of the Indian Copper Corporation Limited was held on November 25 at the Royal Exchange Hall, Royal Exchange, Calcutta.

The following is the address by the Chairman, **Sir Anthony J. Elkins, C.B.E.,** which was circulated with the Report and Accounts for the year ended December 31, 1952:—

From January 1, 1952, to April 5, 1952, your Company was under the management and control of the London Board, and for the remainder of the year under the management and control of the present Board of Directors and the Managing Agents in India.

ACCOUNTS

The properties of the Company continue to be well maintained and adequate depreciation has been provided. There is little to comment on in the balance sheet but, as you will have observed, the total current assets exceed the current liabilities and tax reserves by £1,247,176, which is a satisfactory figure. Stocks of manufactured products, although still high, were reduced by £121,825 as compared with the figures shown in the previous year's accounts.

The profit for the year of £687,180 before providing for taxation and depreciation is less than last year's record figure, but the decrease has been largely counterbalanced by an appreciable saving in taxation as a result of the transfer of control to India.

The circular shaft has now been almost completed but, in order to maintain ore reserves, mining operations at greater depth must be continued. For this reason the sum of £185,000 has been allocated to general reserve as against £175,000 last year.

After giving full consideration to the increasing costs of mining at greater depths and also the uncertain prospects due to fluctuations in the metal market, your Directors recommend a dividend of 12½ per cent free of income tax payable by the Company.

COPPER LEASES—OPERATING RESULTS

A detailed review of the year's operations is given in your General Manager's report, which can be seen during office hours at the Company's head office.

The main features are briefly summarized in the Directors' report. The ore treated in the mill was 48,838 s.tons below the previous year which was the second highest figure recorded and the production of refined copper decreased by 1,004 l.tons.

The rolling mill production was decreased, as compared with the previous year, by 3,218 l.tons on account of poor market conditions.

Towards the close of the year, when there was a restricted demand for the Company's products in India, permission was obtained from the Government of India to export 2,000 tons of copper ingots.

Development. — The total footage developed increased by 853 ft., with an increase in the percentage of payability copper content and stoping width as compared with the previous year's results, due to a larger proportion of development being made through favourable payable ground in the Mosaboni Mine.

Ore Reserves.—The increase of 224,404 s.tons now brings the total estimated ore reserves to a record figure of 3,448,795 s.tons. The ore reserves at both Badia and Dhobani Mines decreased, while Mosaboni Mine, where development results continue to be satisfactory, more than made up the deficiency.

The main development for the ore reserves was again at the North Badia Section of the Mosaboni Mine, but as development in depth of this comparatively new ore shoot has now caught up with the old Mosaboni Mine, further ore reserves can only be opened up by the general deepening of the mine.

The main development at Badia was around the eight and ninth levels to the north, but results continue to be disappointing.

At Dhobani mine development is suspended, although the mine continued to produce a small tonnage of payable ore during the year, but this will cease in 1953.

SALES

During the year there was a heavy fall in metal prices, including zinc, but copper prices held up fairly well. The average selling prices during the year were:—

Copper ingots	...	...	...	£241 per ton
Rolled brass	...	...	...	£270 „ „
Yellow metal circles	...	...		£281 „ „
Rolled copper	...	...	...	£275 „ „
Copper circles	...	...	...	£285 „ „

Kyanite.—Despatches increased by 3,254 tons as compared with the previous year.

Export prices increased from £22 to £28 per ton up to September, but thereafter they fell to £25 per ton by the end of the year. Even this price has not been maintained, and the current price is £20 per ton.

Labour.—Conditions deteriorated during the year under review, and the Mosaboni Mines Union separated from the Works Union before the end of the year. Shortly after the close of the year there was a strike resulting in a complete cessation of production from February 28 to June 5, 1953, the effects of which will be reflected in the accounts for 1953.

Staff.—I wish to place on record my appreciation of the willing co-operation of the staff at the mines and works during the year under review.

The General Manager, Mr. E. R. Dempster, was on leave during the year, and Mr. N. A. B. Hill, the Mine Superintendent, acted for him in his absence.

The Report and Accounts were adopted and the retiring Director, Sir Asoka Kumar Roy, was re-elected.

THE BRITISH BURMAH PETROLEUM COMPANY

The annual general meeting of The British Burmah Petroleum Company Limited, was held on October 27, 1953, in Johannesburg. **Mr. B. L. Bernstein** presided in the unavoidable absence of the chairman, Mr. A. P. Faickney. The following is an extract from the chairman's circulated statement:—

The transfer of the administrative control of your company to the Union of South Africa was effected on April 1, 1953. Little progress has been achieved with the suit which your company had to bring against the Government of Burma in order to safeguard the company's legal right to compensation for the destruction of its assets ordered by the then Government of Burma as a war measure.

In respect of its 2½ per cent interest in the merger of the oil interests in Burma under the management of The Burmah Oil Company Limited, your company received £12,039 during the year as its share of the net proceeds of the sale of indigenous oil products, etc. Again I can report no finality in respect of the negotiations in progress with the Burmese Government for it to participate in the industry operated by the above-mentioned merger.

During the past year our South African subsidiary, The British Burmah Petroleum Company (S.A.) (Pty.), Ltd., made further satisfactory progress and earned a profit of £47,651. It was mainly this profit which has enabled the consolidated accounts to disclose a group profit of £46,264, as against the previous year's profit of £46,978, which latter figure included an extraneous item of £8,578 in respect of certain investments realized.

The British Burmah Petroleum Company (S.A.) (Pty.), Ltd., continues to hold substantial interests in Anglo-Transvaal Consolidated Investment Company, Ltd., South African Torbanite Mining and Refining Company, Ltd., and Masonite (Africa), Ltd. In addition it holds the managing agencies of South African Torbanite Mining and Refining Company, Ltd., and of Colas South Africa, Ltd., which latter company is expanding its activities in the Union of South Africa and both Northern and Southern Rhodesia. The British Burmah Petroleum Company (S.A.) (Pty.), Ltd., has declared a dividend of 10 per cent, the receipt of which by your company has enabled your directors to recommend the declaration of a dividend of 5 per cent.

The report was adopted.

THE RENONG TIN DREDGING COMPANY, LIMITED

SIR JOHN HAY ON PRESENT POSITION AND PROSPECTS

The Fortieth Annual General Meeting of The Renong Tin Dredging Company, Limited, will be held on December 14, 1953, at 52/54 Gracechurch Street, London, E.C.3.

The following is the statement of **Sir John Hay,** the chairman, which has been circulated to Stockholders with the Directors' Report and Accounts:—

MINING OPERATIONS

The output of tin ore for the year ended June 30, 1953, amounted to 352 tons, against 838 tons for the previous year. The fall was due, as explained in the Directors' Report, to the fact that only No. 2 Dredge at Rasa was in operation during the year, Gombak Dredge having been docked for dismantling and transport to Jinjang.

The tin return from Rasa was fully up to expectations, recoveries again exceeding estimated bore values. No. 2 Dredge will continue working in its present area throughout the current year. Returns to date have been remarkably good, the output of tin ore for the four months to the end of October being 287 tons against 86 tons for the comparable period last year. This rate of outturn far exceeds any recoveries previously secured at Rasa and is due to the fact that we have been passing through an exceptionally rich virgin belt. Production at this rate is only temporary. Nevertheless, in the absence of any unforeseen difficulties, the output for the current year should exceed that for last year.

ACCOUNTS

For the first nine months of the financial year the price of tin was fairly steady, but in the last three months the fall was precipitous. In the result tin ore sale proceeds averaged £637 per ton against £676 per ton for the previous year. The combination of a greatly reduced output and the lower price received explains the fall in profit which came out at £88,870 before tax compared with £278,494. From these earnings we have to set aside for income and profits taxes due to the British and Malayan Governments £44,591 apart from £32,738 taken by the Malayan Government in the form of Tin Duty, which is charged in our costs. Lower earnings were coincident with further substantial expenditure on the Gombak Dredge, the outlay on which amounted to £38,375. The Tin Dredging Industry being subject to violent fluctuations of fortune, the Board continue to follow their prudent course of writing off exceptional expenditure in the year in which it is incurred. For the same reason, during the past two years of abnormal prosperity, reserves were built up as a buffer against less prosperous times. Consequently, the Board feel justified on this occasion in drawing on accumulated past profits, thus enabling them to recommend a final dividend of 15% *less* tax, making 30% *less* tax, for the year, leaving to be carried forward a balance of £26,760.

WAR DAMAGE AWARDS

I informed you last year that apart from the award of £100,831 in respect of Gombak and No. 2 Dredges of which £75,623 has been paid on account, a deferred award of £27,323 has been made in respect of No. 3 Dredge, but that to qualify for payment the Dredge had to be restored and again put to work. From the Directors' Report and the Report of the Consulting Engineers you will observe that it has been decided to put the Dredge into working order for the purpose of dredging tailings. The award for restoration has consequently become due and an initial payment of £9,392 was recently received. Since then, a further and final distribution of 15.4% has been declared raising the total proportion of payments against awards to 90.4%, and we expect a settlement shortly.

FUTURE OPERATIONS

Rasa

No. 2 Dredge. The present selected area of the Western Section of Kuala Kubu will, on present indications, be worked out by about the end of 1955 and the necessity will then arise for transferring the Dredge to the Eastern Section. Dismantling of the Dredge will not be necessary for this transfer and a suitable course is being reconnoitred for the Dredge to cut its way into the area. Terms and conditions of a Mining Lease which are still the subject of negotiations with Government will involve extensive river conservation works, the cost of which together with other initial expenditure is provisionally estimated at £75,000. This sum, however, will not need to be found until 1955 by which time the Company's funds should be strengthened from the Jinjang venture.

No. 3 Dredge. The expenditure incurred on the rehabilitation of this Dredge will amount approximately to £36,000 part of which will be offset by War Damage Compensation. I must stress to Stockholders that dredging of tailings with tin at its present level is a marginal operation and that revenue on the basis of estimates presented to us will be very modest. In fact, until in practice a recovery factor is established, we must look upon this operation as an experiment.

Jinjang

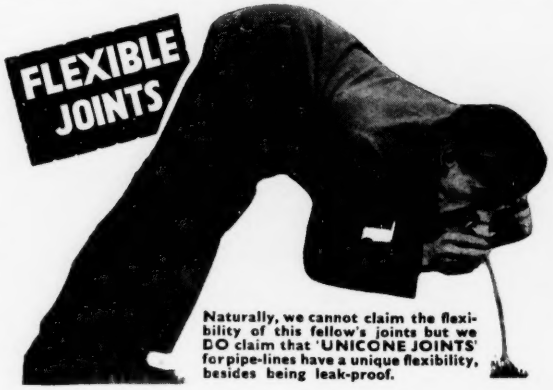
A circular letter issued to Stockholders on July 9, 1953, gave details of the Jinjang property and of revenue prospects from this venture which we are undertaking in association with Straits Tinfields Ltd. There is no need for me to add to the information given therein. Removal of the Dredge from Gombak to Jinjang and preparation of the reconstruction site were completed in September and reconstruction of the Dredge is now under way. If all goes well and no unexpected difficulties supervene we expect mining operations to commence about June, 1954.

In summary, our present position and prospects can be put thus. During the current year we shall be still dependent for our revenue on No. 2 Dredge at Rasa, with perhaps a small contribution from No. 3 Dredge. Although output of tin ore is expected to show an increase the full effects of the fall in the price of tin will be felt and it should not, therefore, be assumed that profits will also show an improvement. Gombak Dredge is not expected to come into regular production in the Jinjang area until the beginning of the financial year, 1954/55. Thereafter, we should again reach our normal productive capacity with possibly some addition from No. 3 Dredge if our hopes that the tailings area to be exploited will prove profitable are justified.

SECURITY

It is reported that improvement in the security situation at Rasa has continued and no incidents directly affecting the Company occurred during the past year. The time has not yet arrived, however, when any relaxation of defensive measures is justified.

Our thanks are due to the Mine Superintendents, Engineers and their staffs and crews not only for the results of the past year's working, but for the concentration and technical skill that has gone into the works carried out on Gombak and No. 3 Dredges.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THE PERAK RIVER HYDRO-ELECTRIC POWER COMPANY

CONTINUED STEADY PROGRESS
MR. HUGH G. BALFOUR'S SURVEY

The twenty-seventh annual general meeting of The Perak River Hydro-Electric Power Company, Ltd., was held on November 26 in London, **Mr. Hugh G. Balfour** (the chairman) presiding.

The following is an extract from his circulated statement:—

The company has continued to make steady progress during the year, although conditions in Malaya, while improving, are by no means yet restored to normal.

The peak load on the system was 59,000 kW., as compared with 57,000 kW. previously. The combined output from our power stations showed a small increase from 367 to 377 million units, although owing to reduced river flow the hydro station at Chenderoh only generated 201 million units, a decrease of 26 million units on the previous year. The steam stations at Malim Nawar and Batu Gajah were therefore more continuously loaded, and in consequence generated 25 per cent. more units than during the previous year. The hydro and steam generating stations have been maintained at a high standard of efficiency.

Although slow delivery of materials again somewhat delayed work on the installation of plant at Batu Gajah, to which I referred last year, the new oil-firing equipment and oil storage tank have been installed. The 80,000 lbs. per hour Babcock and Wilcox boiler, which forms part of our post-war rehabilitation programme, should come into service during the current financial year, and this will restore the station to its pre-war steaming capacity. The other plant, consisting of three small turbo-alternator sets and boilers, with a total installed capacity of 6,000 kW., should also come into operation in the near future. Last year Batu Gajah generated just over 50 per cent. of the output of Malim Nawar, but as the new oil-fired plant at Batu Gajah comes into operation this ratio will change considerably.

During the last four months of the year under review a sharp fall occurred in the price of tin, which dropped from about £950 per ton to about £570 per ton at the end of July. Some falling-off in the demand for electric power has resulted, due to short working by certain mines and to the closing down of a number of Chinese gravel-pump mines, which had been operating on narrow profit margins. The system peak load, which had risen to 59,000 kW. during February, 1953, had receded by the end of July last to 55,000 kW. Although a number of marginal mines have stopped working, the reduction in load has been relatively small, and there still remains a considerable number of potential consumers unconnected to our system.

In order to maintain our output at a high level of efficiency, progressive renewals of plant and equipment are necessary.

HIGHER OPERATING EXPENSES

Operating expenses were higher at £596,437, compared with £509,236 previously, the increase being largely due to the increased cost of labour and materials, and the more continuous working of the steam stations.

The operating balance is £788,753, to which has to be added the gross dividend from the subsidiary company, interest less exchange differences, and transfer fees, making a total of £811,817. After providing for London administrative expenses and directors' fees, the balance carried to net revenue account is £796,617. Our usual allocation to depreciation account requires £250,000, and taxation on the profits for the year is estimated at £387,500, so that the balance available for appropriation is £159,117.

The Preference share dividend and the allocations to the general and contingency reserves total £98,594, leaving £60,523, out of which the directors recommend a dividend of 5 per cent. plus a bonus of 1 per cent. on the Ordinary share capital, which requires £57,750 net. The available surplus on the company's operations for the year is therefore reduced to £2,773 which, with the amount of £103,403 brought in, result in a balance of £106,176 on net revenue account to be carried forward to the current financial year.

With regard to prospects for the current year, I do not wish to indulge in any facile prophecy, particularly in view of the uncertain trend of the tin market. Monthly returns to date are, however, running at a satisfactory rate, and unless any serious setback occurs in the tin position, or unless general conditions in Malaya deteriorate in a manner which there seems to be no reason to expect at present, our next account should compare not unfavourably with the one now presented to members.

The report was adopted.

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KAMUNTING TIN DREDGING

MR. JACK ADDINSELL'S STATEMENT

The fortieth annual general meeting of Kamunting Tin Dredging, Ltd., was held on November 24 at 55-61 Moorgate, London, E.C., **Mr. Jack Addinsell** (chairman of the company) presiding.

The following is his statement for the year ended March 31, 1953, which had been circulated with the report and accounts and was taken as read:—

The accounts now presented reveal another year's satisfactory trading and your Board is happy to be able to recommend the payment of a final dividend of 27½ per cent, less tax, which with the interim of 12½ per cent already paid makes a total of 40 per cent, less tax—the same as was paid last year.

The sum of £33,000 has been written off dredges, buildings and plant as additional depreciation in order to leave these assets at a figure in the balance-sheet which your Board considers reasonable in the light of conditions obtaining to-day. A further sum of £75,000 has been placed to transfer of dredges reserve bringing the total under this heading to £275,000.

CONCENTRATE PRODUCTION

Production of concentrate during the year amounted to 1,979 tons—a decrease of 503 tons on that of the previous year. This decrease was due mainly to our Pangnga No. 2 dredge having exhausted its payable ground in February, 1952, and to a decline of 76 tons in the output of Pangnga No. 1, the two together showing a decrease of 429 tons.

The payable areas on the Pangnga River leases have now been exhausted and the two dredges are being transferred to our new property at Bangtoe. While it is not possible to form an accurate forecast of the dates on which these dredges will commence production, shareholders can rest assured that everything possible is being done to expedite the work of transfer and reconstruction.

It now appears that the cost of this work will be about £570,000, and it is satisfactory to note that the whole of this will be found from the cash balances accumulated from profits of past years.

Our No. 1 dredge on the Kamunting property has exhausted its payable reserves and ceased operations in April of this year. This is our oldest dredge and has been in commission since 1915. It is a shallow-digging machine, and it is very doubtful if a suitable area can be found for it; meanwhile it is placed on a "care and maintenance" basis.

Shareholders will appreciate that until the two Pangnga dredges commence production from the Bangtoe area we shall be faced with a further decline in production, for, as already mentioned, our Pangnga No. 1 and Kamunting No. 1 dredges, which together produced 557 tons of concentrate during the year under review, are now out of commission.

DRASTIC PRICE FALL

Since the end of the company's financial year the price of tin in Singapore, which on March 31 was equivalent to £921 15s. per ton, has fallen drastically, and is now the equivalent of a little over £600 per ton. It will be patent to shareholders that such a decline must have a seriously adverse effect on the profits of all tin-mining companies.

The campaign against the terrorists in Malaya has gone and is going well under the able direction of Sir Gerald Templer, but the most careful precautions must still be taken in every direction, and our thanks are due to the members of the staff in both Malaya and London for their continued loyal service and support.

The report and accounts were unanimously adopted and a final dividend of 27½ per cent, less tax, making a total of 40 per cent, less tax, for the year, was approved.

The retiring director, Mr. W. E. Wallis, was re-elected, and the other formal business having been duly transacted, the proceedings terminated.

MINE MANAGER. Long established Tin Dredging Company with headquarters in Malaya requires a technically trained and experienced Mine Manager for a mine in South Thailand. Conditions of employment: three years' contract embodying first class passages, free furnished quarters, six months' leave on completion and emoluments in the order of £175 per month plus bonus. Applications, accompanied by copies of testimonials, should be submitted in the first instance to Box No. 541.

RAND SELECTION CORPORATION LTD.

(Incorporated in the Union of South Africa)

DIVIDEND No. 76

SHARE WARRANT COUPON No. 78

With reference to the notice of declaration of dividend published in the Press on November 13, 1953, the following information is published for the guidance of holders of Share Warrants to Bearer:

The DIVIDEND on shares represented by SHARE WARRANTS TO BEARER will be PAID on or after January 5, 1954, after surrender of the appropriate coupons at BARCLAYS BANK (DOMINION, COLONIAL AND OVERSEAS), Circus Place, London Wall, London, E.C.2, where listing forms may be obtained.

Coupons must be left four clear days for examination and may be presented any day (Saturdays excepted) between the hours of 11 a.m. and 2 p.m.

Coupons may also be presented for payment in French currency at Banque de l'Union Parisienne, 6 and 8 Boulevard Haussmann, Paris 9e, or in Belgian currency at the Guaranty Trust Company of New York, 27 Avenue des Arts, Brussels, Belgium.

Union of South Africa Non-resident Shareholders' Tax will be deducted at the rate of 6.45 per cent from the dividend payable in respect of all Share Warrant coupons. United Kingdom Income Tax will also be deducted from Coupons presented for payment at Barclays Bank (D.C. and O.), London, unless Coupons are accompanied by Inland Revenue declarations. Where such deduction is made, the net amount of the dividend will be 1s. 3.934d. per share, viz.:—

	s. d. per share
Amount of dividend declared (in British currency at par)	2 0
Less: South African non-resident shareholders' tax at 1s. 3.48d. in the £	1.548
	1 10.452
Less: United Kingdom Income Tax at 4s. 6d. in the £ on the Gross amount of the dividend of 2s. 4.970d.	6.518
Net amount:	1 3.934

For and on behalf of

ANGLO AMERICAN CORPORATION OF SOUTH AFRICA LIMITED.

London Office:
11 Old Jewry, E.C.2.
November 24, 1953.

London Secretaries,
W. E. GROVES.

NOTE:—The Corporation has been requested by the Commissioners of Inland Revenue to state:—

Under the provisions of Section 348 and the Seventeenth Schedule of the Income Tax Act, 1952, as amended by Section 26 of the Finance Act, 1953, relating to "unilateral relief" from double taxation, South African tax applicable to the dividend is allowable as a credit against the United Kingdom tax payable in respect of the dividend. The deduction of tax at the reduced rate of 4s. 6d. in the £ instead of at the standard rate of 9s. 0d. in the £ represents a **provisional** allowance of credit at the rate of 4s. 6d. in the £. The final rate of credit allowable to a particular shareholder depends on his personal rate of tax and may be more or less than 4s. 6d. in the £. Revision of the credit involves a corresponding adjustment of the amount shown above as the gross amount of the dividend for United Kingdom tax purposes.

DREDGEMASTER. A certified Dredgemaster experienced in Steam and Electrical dredges, is required by a tin dredging company with mines in Malaya and Siam. A three years' contract will be offered the successful applicant carrying free furnished quarters and emoluments totalling at least £105 per month, depending on marital status and location, plus a bonus determined by mine profits. Applications, accompanied by copies of testimonials, should be submitted in the first instance to Box No. 540.

RHODESIAN ANGLO AMERICAN LIMITED

Abridged Report of the Directors for the year ended June 30th, 1953

FINANCE AND ACCOUNTS

Capital and Capital Reserve.—The issued capital was increased to £6,425,000 by the issue of £468,391 Stock of which £100,158 was issued for cash to Anglo American Corporation of South Africa Limited at 53s. 6d. per 10s. unit and £368,233 was issued to that Corporation (and associates) and to Powell Duffryn Limited in exchange for shareholdings. These issues were made at a total premium of £1,929,000 which has been added to Share Premium Account.

Profits.—The Profit for the year to June 30, 1953, after charging all expenses, was		£4,346,668
Taxation payable (including £370,000 for Profits Tax relating to an earlier period—see below) was estimated at		433,219
		3,913,449
Profits unappropriated at July 1, 1952, were		708,255
Making a total available of		4,621,704
	£	
An Interim Dividend of 1s. 6d. paid on May 14, 1953, amounted to	945,000	
The Directors recommend the payment of a Final Dividend of 4s. 9d., absorbing	3,051,875	
		3,996,875
Leaving profits unappropriated amounting to		£624,829

It should be noted that this year's dividends are payable on an increased capital and that a full year's return was not received on the investments acquired during the year. The amount distributable has also been affected by the exceptional debit for Profits Tax.

Profits Tax.—The Profit and Loss Account has been charged with a provision of £370,000 in respect of United Kingdom Profits Tax for the six months to December 31, 1950. This liability arises from a series of technical complications which could scarcely have been foreseen, affecting certain income which was, until the receipt recently of a claim by the United Kingdom Revenue Authorities, regarded as exempt from Profits Tax. After very careful consideration it has been decided that no useful purpose would be served by attempting to oppose the claim, which is considered legally well-founded although inequitable in its results.

INVESTMENTS IN SUBSIDIARY COMPANIES

RHOKANA CORPORATION LIMITED.—Capital.—The Company's holding in Rhokana Corporation Limited comprises £1,285,123 Ordinary Stock and £24,777 "A" Stock, representing 52·396 per cent of the total Ordinary and "A" Stock in issue.

The Net Profit for the year, after taxation, was £8,391,027 (against £7,460,922, excluding an exceptional profit of £400,000 for the preceding year).

Copper Production.—Total saleable output of Blister and Electrolytic Copper was 74,216 long tons compared with 82,764 long tons in the previous year. Production in all departments was restricted by poor coal deliveries and was twice interrupted by strikes.

Cobalt Production.—Production from the Electrolytic Cobalt Refinery began in August 1952, but was restricted for most of the year by operating difficulties. These have been largely overcome during recent months and the total production of Cobalt metal for the year was 259 short tons. It is anticipated that further plant modifications now in hand and improved operating technique will give a steady and increased output of Cobalt metal; 1259 short tons of Cobalt alloy, containing 472 short tons of Cobalt, were produced as against 1698 short tons of alloy, containing 645 short tons of Cobalt, during the preceding year.

BANCROFT MINES LIMITED.—Since the year end, The British South Africa Company has subscribed for 3,000,000 Bancroft shares and a further 9,500,000 have been subscribed by Rhokana direct. The remaining 7,500,000 shares in Bancroft Mines were offered to Rhokana's stockholders in the proportion of 3 Bancroft shares to every £1 unit of Rhokana stock; and Rhodesian Anglo American Limited thus became entitled to 3,929,700 shares and offered the greater part of these to its stockholders in the ratio of 3 Bancroft shares to ten 10s. units of Rhoanglo stock. All these shares have now been issued at 6s. per share inclusive of 1s. premium.

Bancroft Mines Limited is now scheduled to come into production early in 1957.

NCHANGA CONSOLIDATED COPPER MINES LIMITED.—Capital.—The Company's holding remains at £1,490,581 Stock, representing 21·294 per cent of the Stock in issue. The Company's interest directly and indirectly (through Rhokana) in the Nchanga capital is virtually unaltered at 38·922 per cent.

The Net Profit for the year, after taxation, was £8,748,525 (against £5,505,600, excluding an exceptional profit of £750,000 for the preceding year).

Copper Production.—Production of Blister and Electrolytic Copper for the year ended March 31 1953, was 93,317 long tons, compared with 68,816 long tons the previous year.

RHODESIA COPPER REFINERIES LIMITED.—Rhodesian Anglo American Limited has no direct holding in the Company, though it controls it indirectly through Rhokana and Nchanga.

The Net Profit, after taxation, was £91,324 (against £85,578 for the preceding year).

Production.—The production of Electrolytic Copper was 111,576 tons, compared with 102,269 long tons for the previous year.

OTHER INVESTMENTS

LUBIMBI COAL AREAS LIMITED.—200,000 shares of 5s. each were acquired during the year from Anglo American Corporation of South Africa Limited, and an additional 260,000 shares were subscribed for in cash. The Company was formed in Southern Rhodesia in 1950 to prospect for coal in that territory.

MUFULIRA COPPER MINES LIMITED.—The Company's direct interest was increased by the acquisition of 40,350 shares and now stands at 294,242 £1 shares.

RHODESIAN ALLOYS LIMITED.—The Company acquired 180,000 £1 shares in Rhodesian Alloys, Limited, a Southern Rhodesian company closely associated with John Brown & Company, Limited, the well-known British engineering concern. Rhodesian Alloys has established at Gwelo a plant for the production of ferro-chrome. The Company has also advanced to Rhodesian Alloys £138,000 on loan.

TANGANYIKA CONCESSIONS LIMITED.—220,807 10s. stock units were acquired during the year.

THE RHODESIA BROKEN HILL DEVELOPMENT COMPANY LIMITED.—The Company's holding was increased from £228,171 to £353,176 stock.

WANKIE COLLIERY COMPANY LIMITED.—Towards the end of the Company's financial year arrangements were made for the acquisition from Powell Duffryn of 800,000 10s. shares of the Wankie Colliery Company in exchange for £125,000 Rhodesian Anglo American stock.

REINCORPORATION

In terms of the Rhoanglo Group Act, which received Royal Assent on May 6, 1953, the Company, in common with the other companies of the Rhoanglo Group, will, as from a date in 1954 not yet selected, cease to be incorporated in the United Kingdom, and will be incorporated under the provisions of the Companies Ordinance of Northern Rhodesia, thus finalising the process of removal from the United Kingdom. Thereupon the Principal Register of Members will be maintained in Northern Rhodesia, but Branch Registers established in London and Johannesburg will maintain unchanged the existing facilities for dealing in the Companies' stocks.

COPIES OF THE ANNUAL REPORT AND ACCOUNTS MAY BE OBTAINED FROM THE HEAD OFFICE, KITWE, OR FROM THE TRANSFER OFFICES AT 44 MAIN STREET, JOHANNESBURG, AND 11 OLD JEWRY, LONDON, E.C.2.

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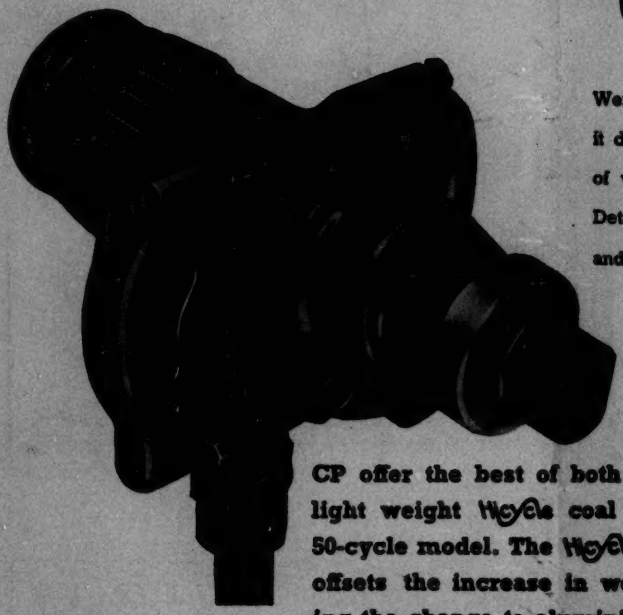

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